SECONDARY
JHS

DepED DEPARTMENT OF EDUCATION

ALS Alternative Learning System LIFELONG LEARNING

LEARNING STRAND 6
DIGITAL CITIZENSHIP

MODULE 3: DIGITAL APPLICATIONS – SPREADSHEETS

ALS Accreditation and Equivalency Program: Junior High School

UNESCO United Nations Educational, Scientific and Cultural Organization

KOICA Korea International Cooperation Agency

LEARNING STRAND 6

DIGITAL APPLICATIONS
SPREADSHEETS

DIGITAL CITIZENSHIP
MODULE 3

ALS Accreditation and Equivalency Program: Junior High School
Learning Strand 6: Digital Citizenship
Module 3: Digital Applications – Spreadsheets

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User's Guide

For the ALS Learner:

Welcome to this Module entitled Digital Applications – Spreadsheets under Learning Strand 6 Digital Citizenship of the ALS K to 12 Basic Education (BEC).

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:

 *Let's Get to Know*	This will give you an idea of the skills or competencies you are expected to learn in the module.
 *Pre-assessment*	This part includes an activity that aims to check what you already know about the lesson. If you get all the answers correct (100%), you may decide to skip this module.
 *Setting the Path*	This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.
 *Trying This Out*	This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.
 *Understanding What You Did*	This includes questions that process what you learned from the lesson.
 *Sharpening Your Skills*	This section provides an activity that will help you transfer your new knowledge or skill in real-life situations or concerns.
 *Treading the Road to Mastery*	This is a task which aims to evaluate your level of mastery in achieving the given learning competency.
 *Don't Forget*	This part serves as a summary of the lesson in the module.
 *Explore More*	In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.
 *Reach the Top*	This part will assess your level of mastery in achieving the learning competencies in each lesson in the module.
Answer Key	This contains answers to all activities in the module.
Glossary	This portion gives information about the meanings of the specialized words used in the module.

At the end of this module you will also find:

References	This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer the Pre-assessment before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your ALS Teacher/Instructional Manager/Learning Facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your ALS Teacher/Instructional Manager/Learning Facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!

CONTENTS

CONTENTS

MODULE 3

LET'S GET TO KNOW

We deal with numbers every day. For example, we budget our money for our food, fare, clothing, and other expenses.

Calculating numbers is a skill we can easily do and apply in our daily lives, but what if you need to calculate larger numbers and bigger sums such as in banks, department stores, supermarkets, grades, or payrolls? This is where a spreadsheet program take part as it helps in computing and organizing data.

This module will walk you through how to use spreadsheets to help you get familiar with it. The following are the three lessons in this module:

Lesson 1 – Understanding Spreadsheets
Lesson 2 – Using Formula and Formatting Cells
Lesson 3 – Inserting Charts and Finalizing Spreadsheets

MODULE 3
PRE-ASSESSMENT

Directions: Choose the correct answer in the parenthesis to complete the statement. Write your answers on a separate sheet of paper.

1. Rows are a range of (horizontally, vertically) aligned cells represented by numbers in a spreadsheet.
2. Columns are a range of (horizontally, vertically) aligned cells represented by letters in a spreadsheet.
3. In moving a cell content, use the (copy, cut) command.
4. (Box, Cell) is the individual intersection between rows and columns.
5. Bold, Italic, Bold Italic, and Underline are (font styles, font types).
6. Arial, Times New Roman, and Verdana are examples of (font styles, font types).
7. Spreadsheet or worksheet is an arrangement of (boxes, cells) in columns and rows.
8. To put a background color for a cell, you need to use the (Fill Color, Font Color) command.
9. Left, center, and right are (horizontal, vertical) alignments.
10. Addition, subtraction, multiplication, and division are (mathematical, logical) operations.
11. The (Line Chart, Pie Chart) is used for easy comparison of proportions.
12. (Formulas, Functions) are predefined formula in Microsoft Excel.
13. (Comma, Point) is the separator used in accounting number format.
14. A function that is used to compute the total of all items in the specified range is called (Sum, Total).
15. A command called (Fill Cell, Fill Color) is used to change the background color of a cell.

Did you get all the answers correct? It is okay if you did not, especially if this is the first time you encountered those words and statements. This module will help you understand spreadsheets and their uses.

LESSON 1

SETTING THE PATH

UNDERSTANDING SPREADSHEETS

After this lesson, learners should be able to

- use the spreadsheet application to generate different documents;
- create a new spreadsheet based on the different available templates;
- demonstrate how to save a spreadsheet under another name, as another file type, and to a location on a drive;
- distinguish the different uses of magnification or zoom tools;
- determine the use of the different toolbars;

- demonstrate understanding of using cells in a spreadsheet;
- apply the process of modifying rows and columns; and
- customize worksheets.

LESSON 1

TRYING THIS OUT

Directions: Identify and locate the contents in the cell references below. Write your answers on a separate sheet of paper.

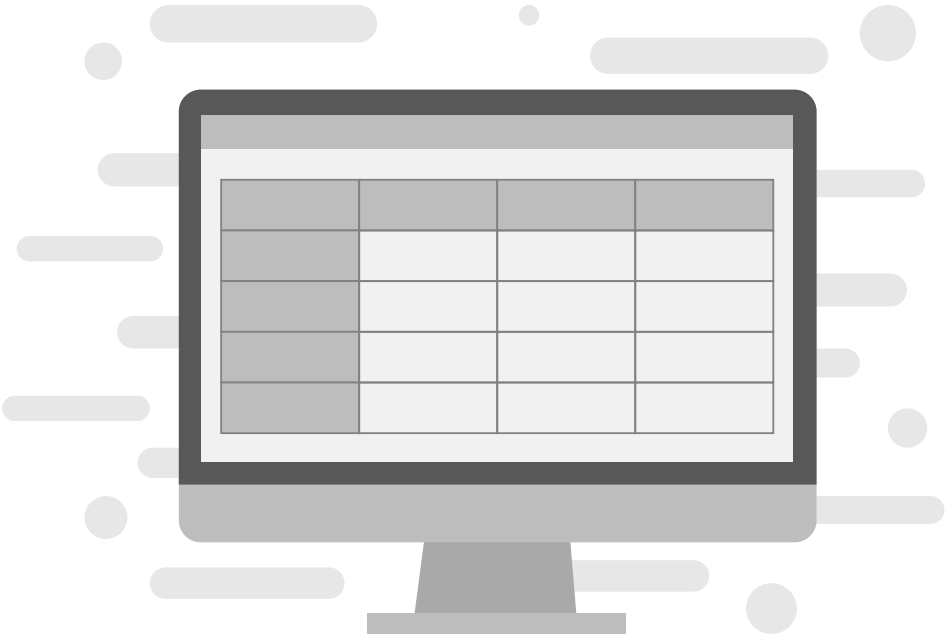
	A	B	C	D	E	F
1	10					
2			Spreadsheets			
3					4	
4	=			02/09/2020		
5			Monday			
6		40%	Tuesday	1,000		
7	10:00 AM		Wednesday			
8			Thursday		88.5	
9			Friday			
10			Saturday			
11			Sunday			

1. A1
2. C2
3. B6
4. E3
5. C5 to C11
6. A4
7. A7
8. E8
9. D4
10. D6

Were you able to locate the contents? If yes, this is how you will be working with cells in a spreadsheet. This is one of the basic ways to familiarize yourself to spreadsheets.

LESSON 1

UNDERSTANDING WHAT YOU DID



SPREADSHEET

A **spreadsheet** or **worksheet** is an arrangement of cells in columns and rows used to organize, analyze, calculate, and report information, usually in numerical form. Spreadsheet software programs are considered unique because they can calculate values using mathematical formulas and data in the cells.

Like word processors, many applications are used to create spreadsheets. Below is a list of the most common spreadsheet applications and their operating system where these programs can be opened.

ICONS	SPREADSHEET PROGRAM	OPERATING SYSTEM
	Microsoft Excel	Windows

ICONS	SPREADSHEET PROGRAM	OPERATING SYSTEM
	Quattro Pro	Windows
	iWork Numbers	Apple MacOS
	OpenOffice Calc	Any
	Google Sheets	Any

USES OF SPREADSHEET

Spreadsheets are mostly used in accounting and recording data, such as preparing budgets, recording students' grades, preparing financial statements, analyzing numbers, managing inventory, or making forecasts. Spreadsheets can be used at home, in school, in work, or in business.

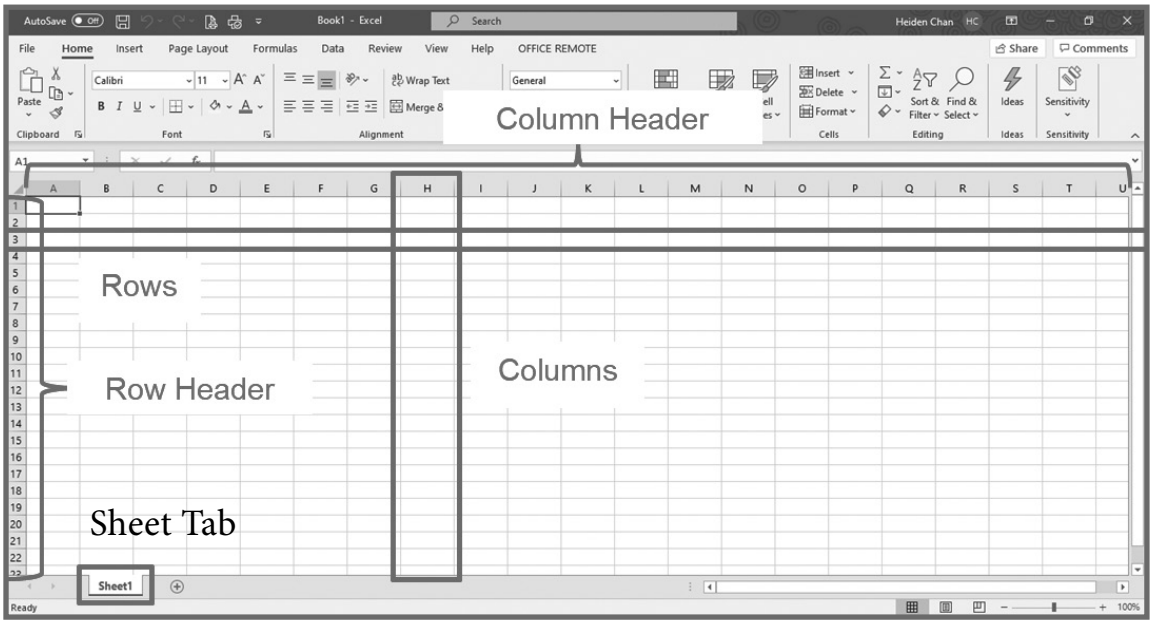
GETTING FAMILIAR WITH THE SPREADSHEET

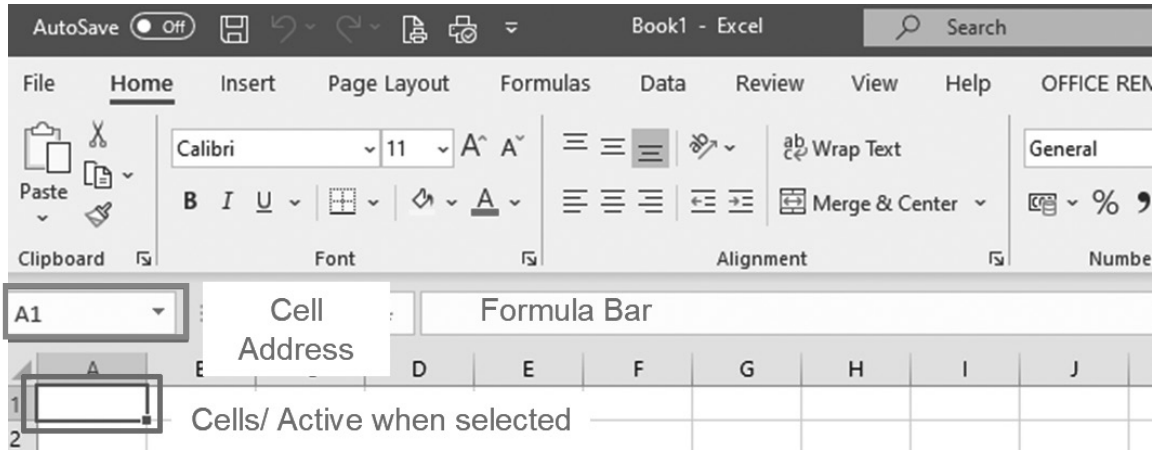
One of the most used spreadsheet programs is **Microsoft Excel** (MS Excel) from the Microsoft Office productivity tools. Though spreadsheets vary, their features are almost the same.

This module will use Microsoft Excel 2019 in getting familiar with spreadsheet applications.

PARTS OF A SPREADSHEET

Let us get to know the parts of Microsoft Excel before creating spreadsheets. To open Microsoft Excel, look for the Excel logo in your desktop or search using the search bar and then double-click. Spreadsheets are contained in a file called workbook. In Microsoft Excel, **Book** with a number beside it (in this case "Book1") refers to the spreadsheet's file name. The basic parts of the Microsoft Excel are row, column, cell, active cell, cell address, and formula bar.





PARTS OF A SPREADSHEET

Rows. The *horizontally aligned cells* in a spreadsheet, identified with numbers (row header).

Columns. The *vertically aligned cells* in a spreadsheet, identified with letters (column header).

Cell. An individual intersection between rows and columns, labeled by the row number and column letter.

Active cell. The cell *currently being edited,* marked by a thick black border around the cell.

Cell address. Also called *cell reference,* an alphanumeric value used to identify a specific cell.

Formula bar. Shows the contents of the active cell and allows you to create and view formulas.

Sheet tabs. Contains the names of the available worksheets in the current workbook.

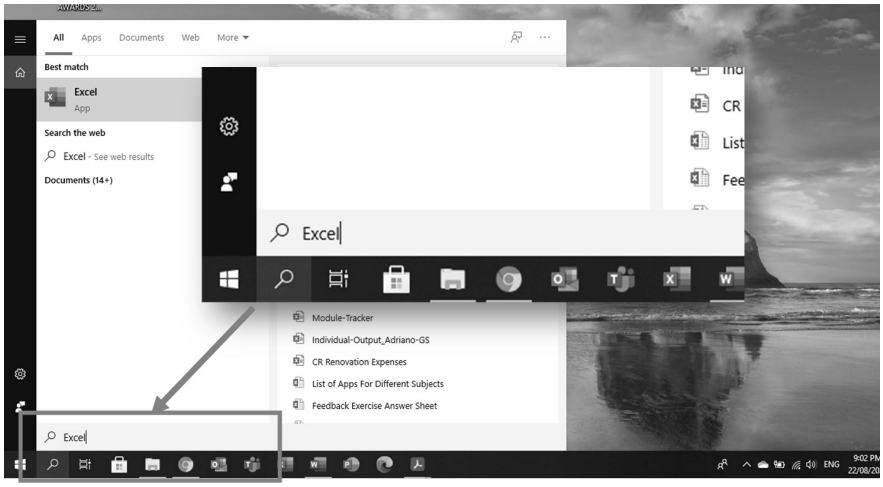
OPENING AND CLOSING A SPREADSHEET APPLICATION

1. To launch or open a spreadsheet application, double-click the spreadsheet icon in the desktop if it is available. For example, you will see the Excel icon is in the desktop.

2. You may also use the search bar on the taskbar. Type the name of the spreadsheet application you are looking for. For example, type **Excel**; if there is a result, click it to launch.

3. To open a new workbook, click **New** on the right side of the screen then select **Blank workbook.**

4. To close a spreadsheet application, click the Close button on the upper right corner of the screen.


All
Apps
Documents
Web
More
Best match
Excel
App
Search the web
Excel - See web results
Documents (14+)
Excel
Module-Tracker
Individual-Output_Adriano-GS
CR Renovation Expenses
List of Apps For Different Subjects
Feedback Exercise Answer Sheet
Excel
ENG
9:02 PM
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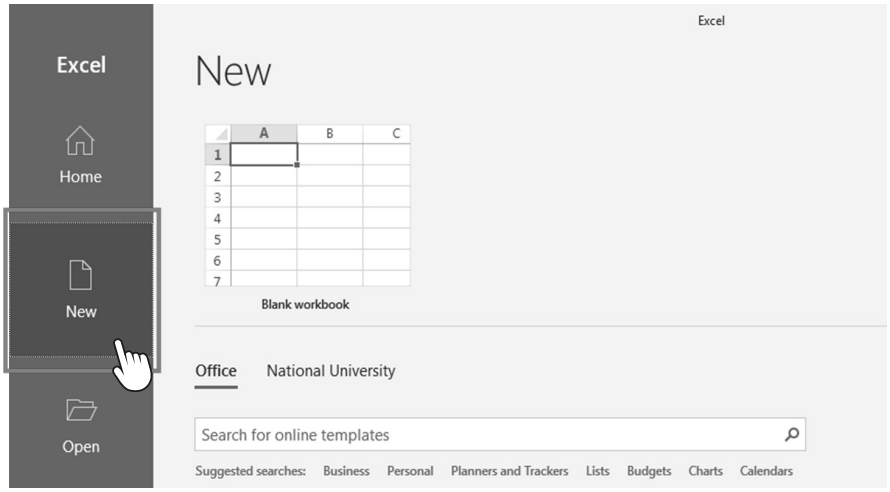
Excel
Excel
Home
New
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Office
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Search for online templates
Suggested searches:
Business
Personal
Planners and Trackers
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Budgets
Charts
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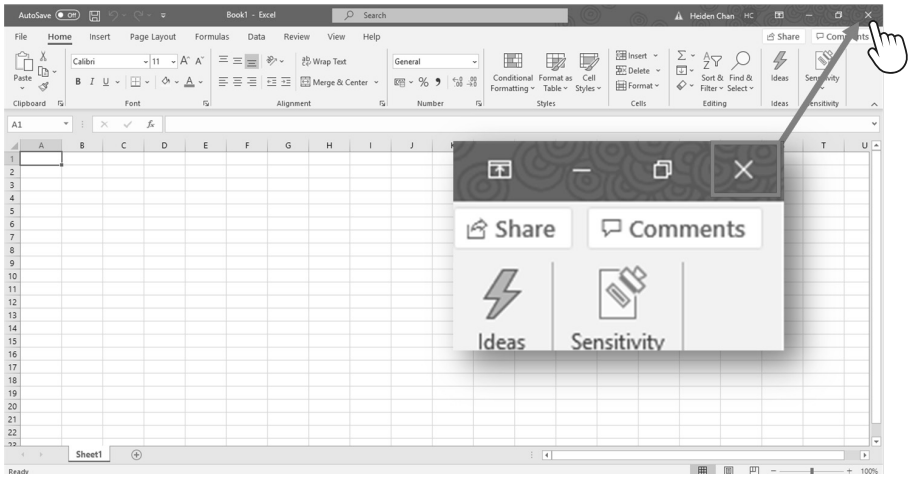
AutoSave
Book1 - Excel
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Data
Review
View
Help
Share
Comments
Paste
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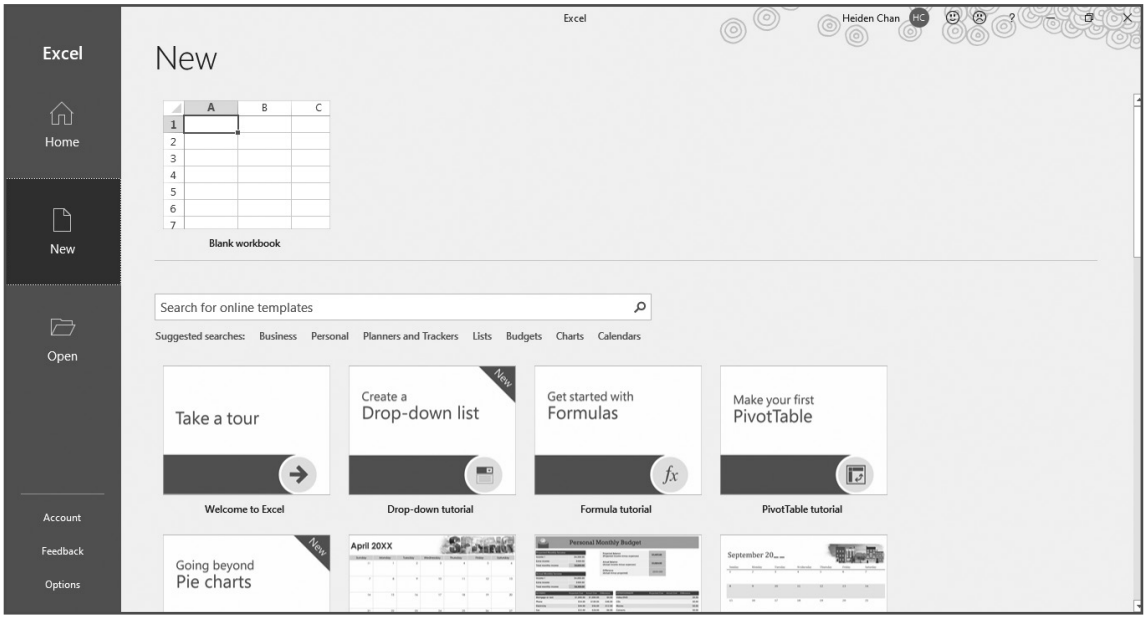
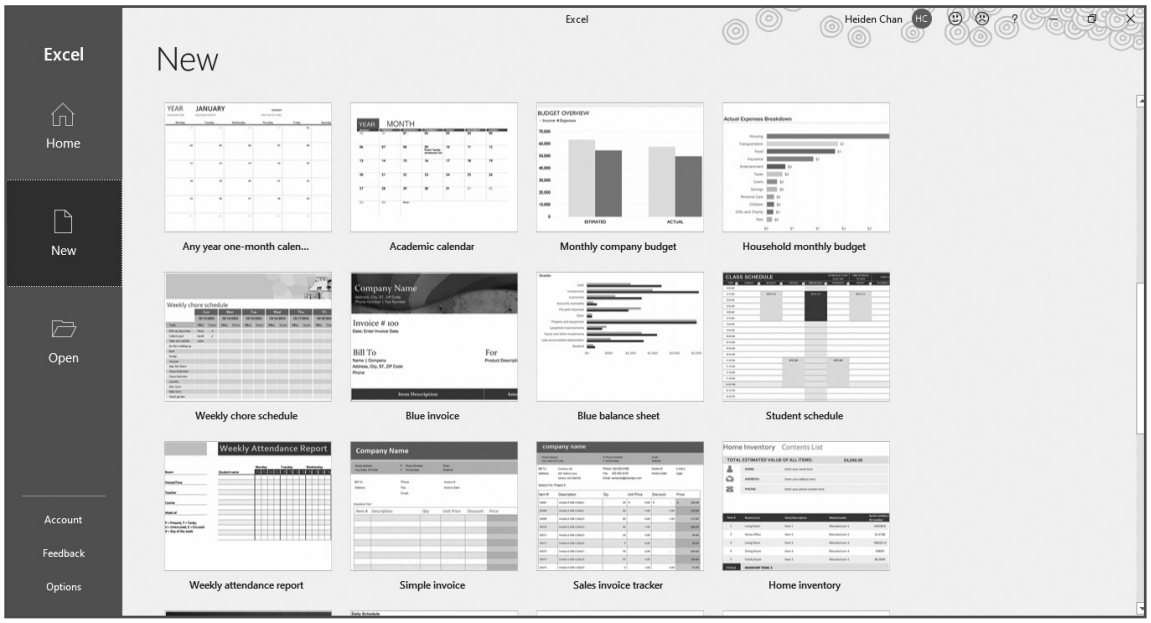
Wrap Text
Merge & Center
General
Conditional Formatting
Format as Table
Cell Styles
Insert
Delete
Format
Sort & Filter
Find & Select
Ideas
Sensitivity
Clipboard
Font
Alignment
Number
Styles
Cells
Editing
Ideas
Sensitivity
A1
Share
Comments
Ideas
Sensitivity
Sheet1
Ready
100%

CREATING A NEW SPREADSHEET BASED ON THE AVAILABLE TEMPLATES

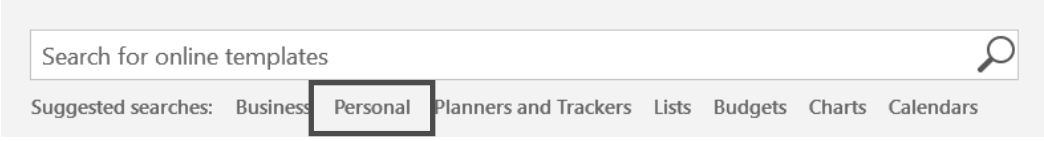
Microsoft Excel allows users to use available templates with formatting and predefined formulas. You can browse different templates, depending on the type of spreadsheet you want to create, such as record lists, budgets, calendars, schedules, inventory lists, and plans.

You can also click on the suggested searches to display more templates or search online templates if you are connected to the internet; just type the word related to the template you are looking for.

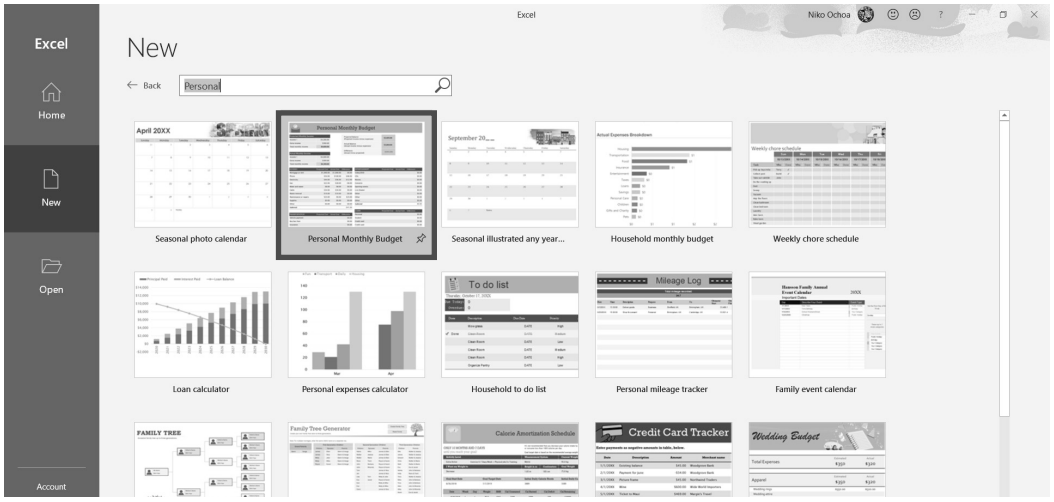


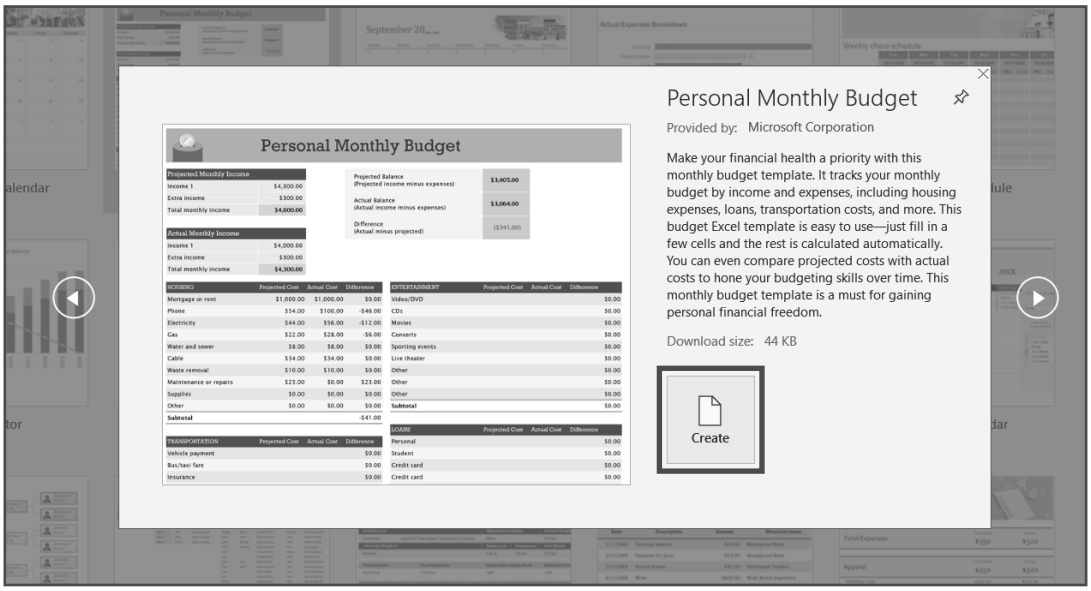


1. Click **Personal** in the suggested searches.



2. Select **Personal Monthly Budget.** Once it is selected, a window will appear with details about the template. Click **Create.**

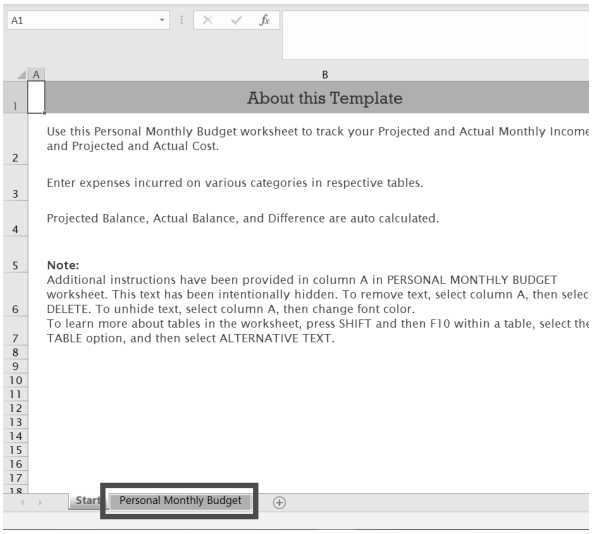




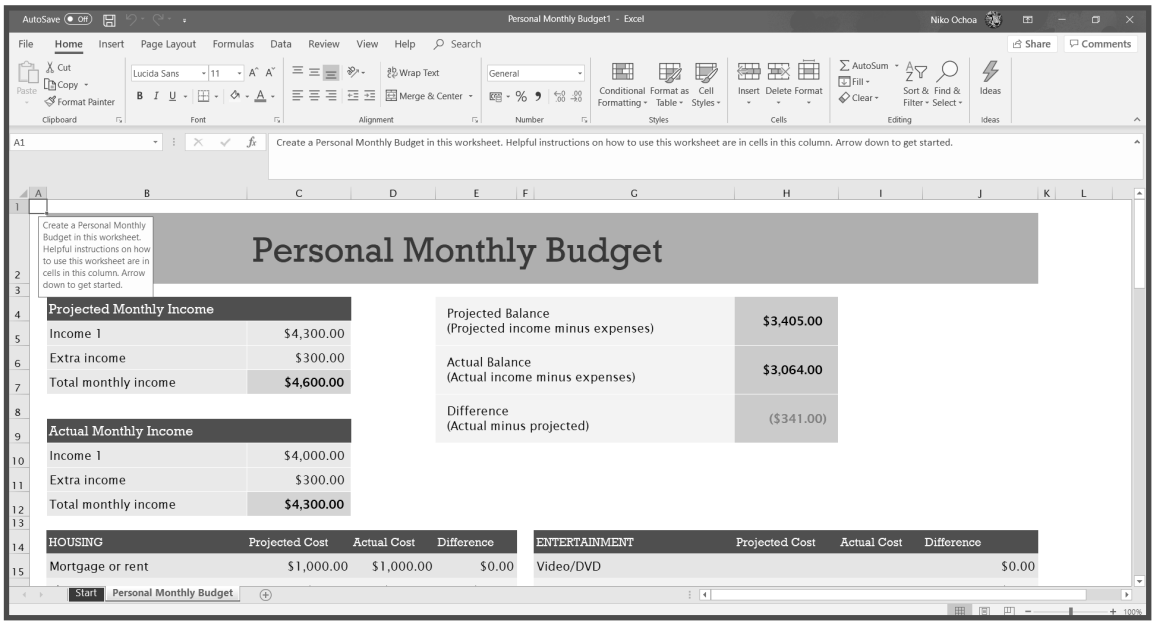
3. Once Excel loads the selected template, you will see two sheets: Start and Personal Monthly Budget.

   Click the Personal Monthly Budget sheet.

4. To edit, click the cells and change to your desired contents.

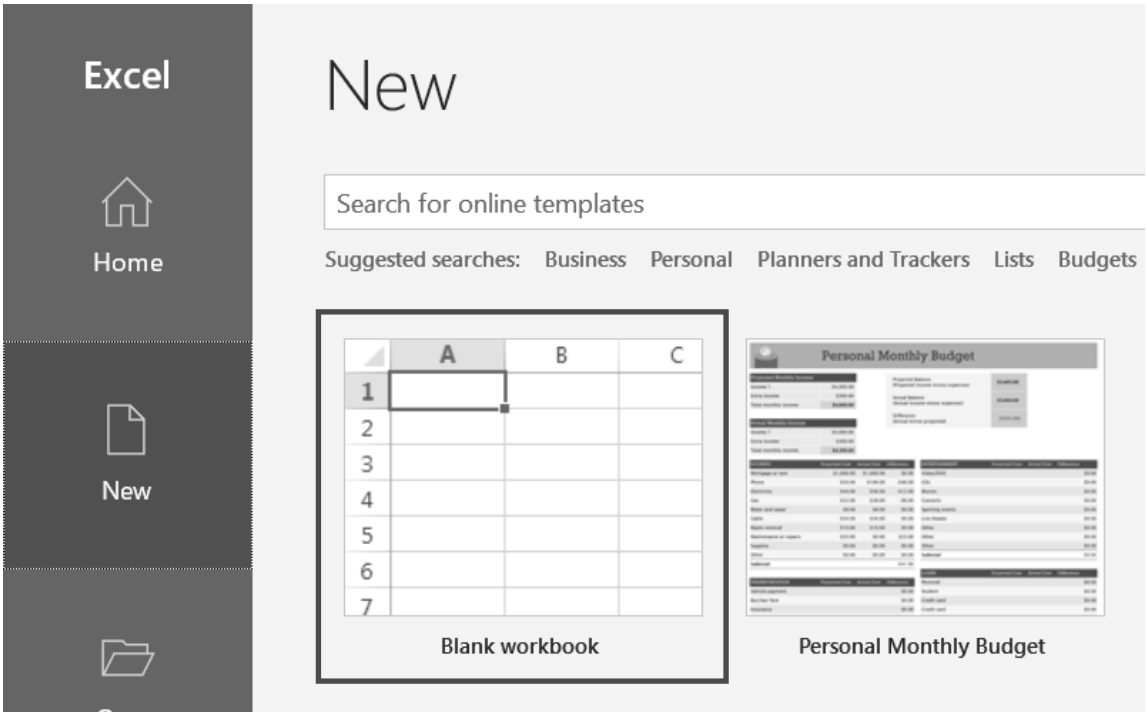


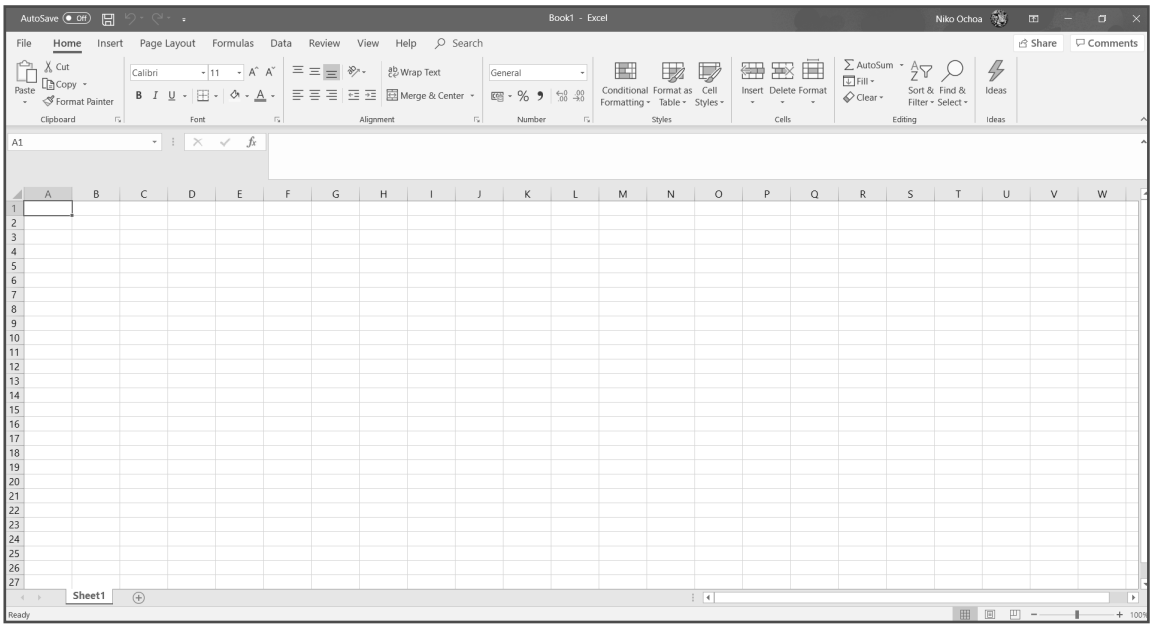
Loaded Personal Monthly Budget Template



Personal Monthly Budget Sheet

5. Templates can still be modified according to the preferred data.
6. If you do not like the templates, you can always go back and use a blank workbook.





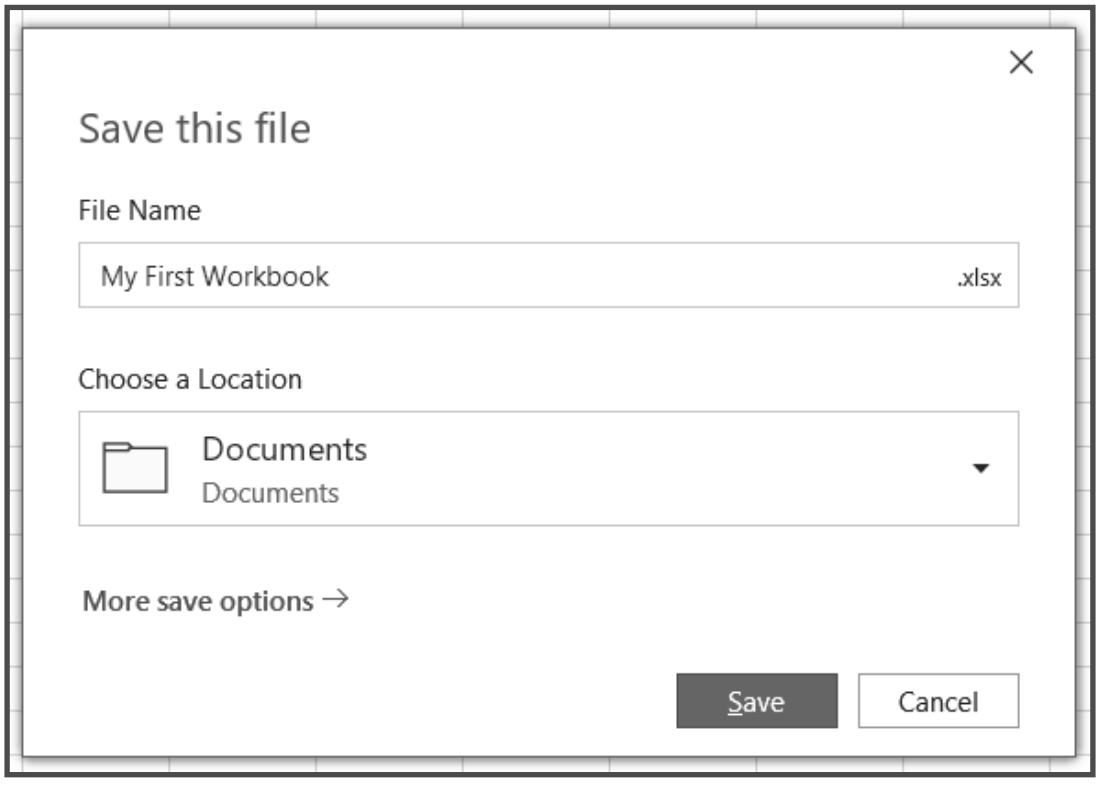
Blank Workbook

SAVING A WORKBOOK

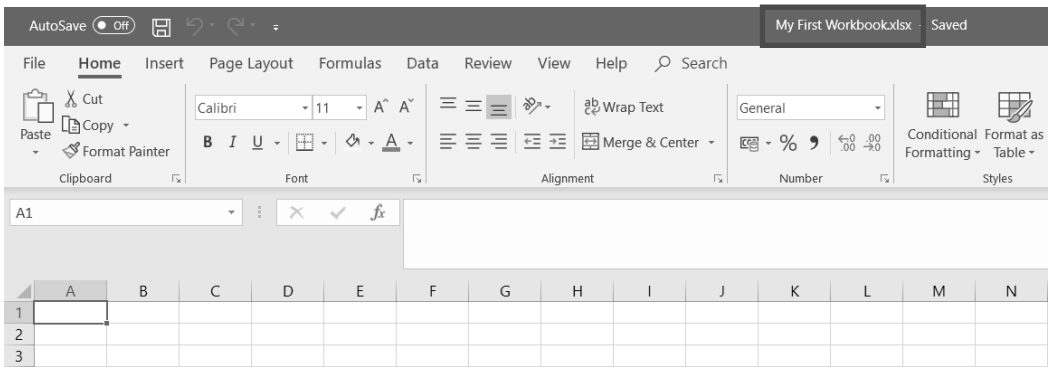
1. To save a new workbook, press **Ctrl+S** on the keyboard. You can also click the Save button 🖫 on the upper left corner of the workbook, or click the File tab then select **Save.**

2. A dialog box will appear, asking for a **File Name** and **Choose a Location** where the file will be stored. If you are going to locate a folder, click the drop-down arrow on **Choose a Location** or click **More save options** to look for other locations. Enter your desired file name and press **Save.**

   Let us save the file as **My First Workbook.**

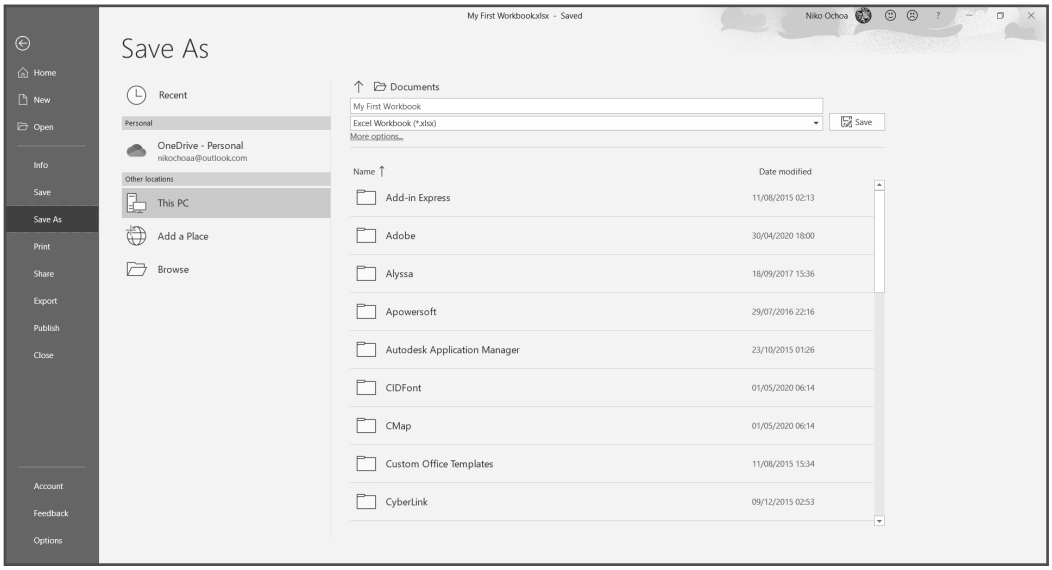


3. Notice that the file name on the upper left corner has changed from "Book1" to "My First Workbook."



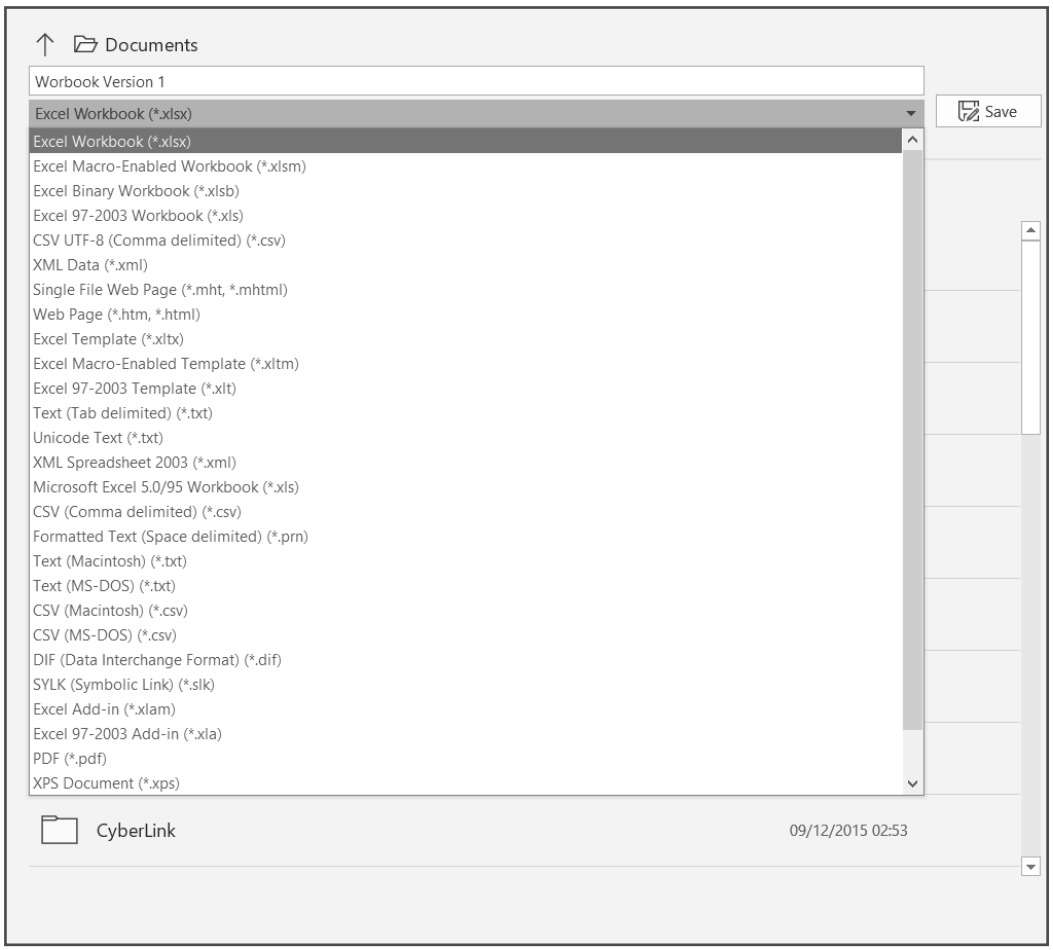
Spreadsheets in Microsoft Excel are usually saved in the Documents folder as XLSX.

4. You can also save the file in a different location, with a different file name, and file type. Just click on the File tab then select **Save As**.



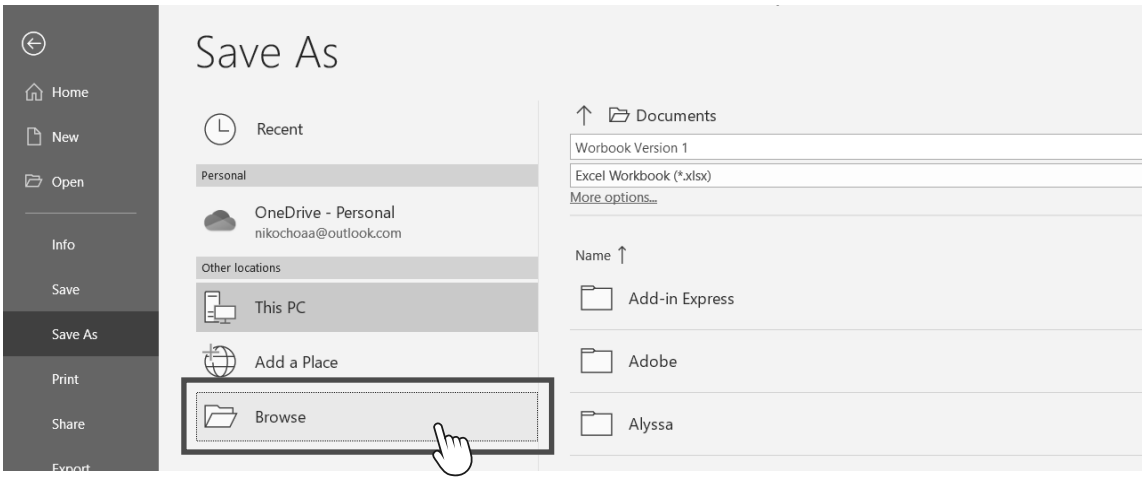
5. To save under a different file name, delete the current filename and type a new one. You can also save it as a different file format, just click the drop-down arrow on the file type and select the desired file type.

It can be saved as a template, Portable Document Format (PDF), web page, rich text format, or any file type you want to use.



Different Available File Types

6. Click **Browse** to choose the folder or drive where you want to save the file. A window will appear where you can locate your folder or drive. Choose a location then click **Save** to finish the process.


Save As
Home
New
Open
Info
Save
Save As
Print
Share
Recent
Personal
OneDrive - Personal
nikochoaa@outlook.com
Other locations
This PC
Add a Place
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More options...
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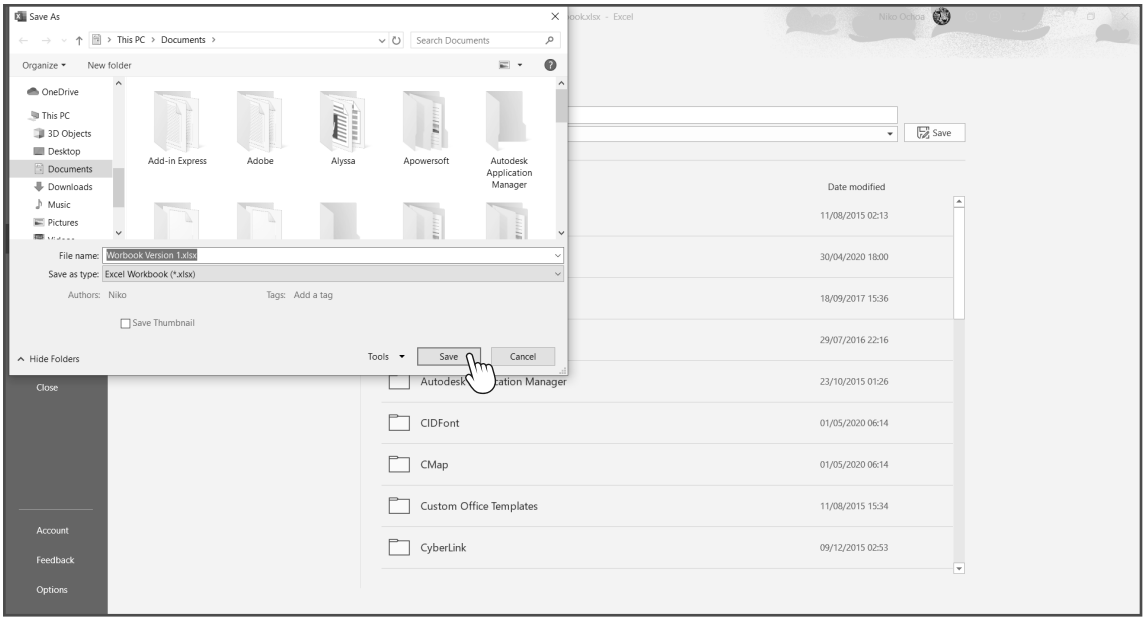
Save As
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Pictures
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File name: Worbook Version 1.xlsx
Save as type: Excel Workbook (*.xlsx)
Authors: Niko
Tags: Add a tag
Save Thumbnail
Hide Folders
Tools
Save
Cancel
Close
Account
Feedback
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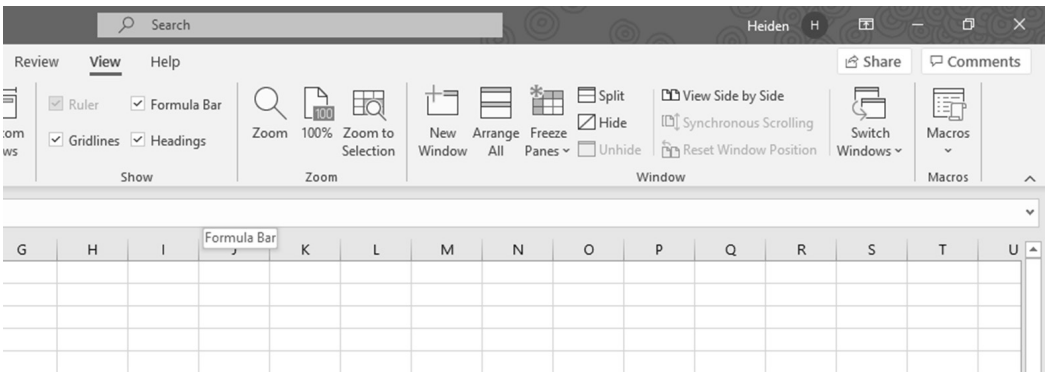
Date modified
11/08/2015 02:13
30/04/2020 18:00
18/09/2017 15:36
29/07/2016 22:16
23/10/2015 01:26
CIDFont
01/05/2020 06:14
CMap
01/05/2020 06:14
Custom Office Templates
11/08/2015 15:34
CyberLink
09/12/2015 02:53

SWITCHING BETWEEN OPEN SPREADSHEETS

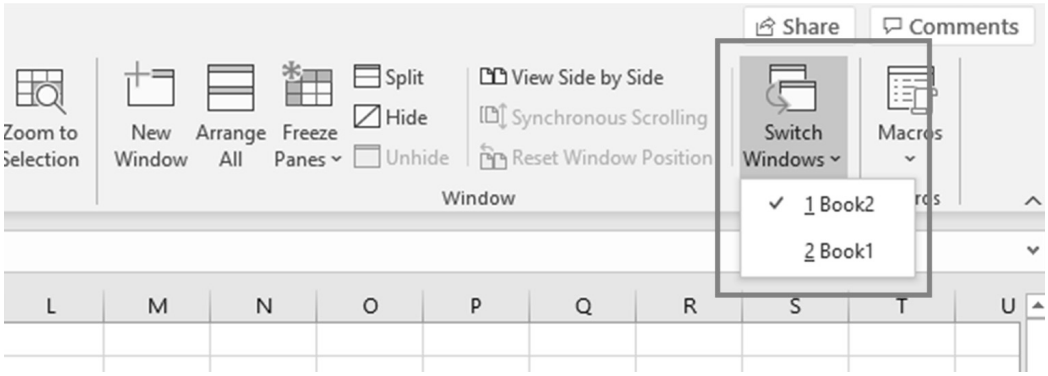
There are several ways to switch between files.

USING THE SWITCH WINDOWS BUTTON

1. One option to switch between the open Excel files is to use the View tab on the ribbon. Go to the View tab and click on **Switch Windows.**



2. Pick the workbook you would like to move from the list of available open files. There will be a check next to the file that you are currently viewing for easy reference. In the example below, there are two open spreadsheets: Book 1 and Book 2. Choose among the open spreadsheets you want to switch with by clicking it.



USING KEYBOARD SHORTCUTS

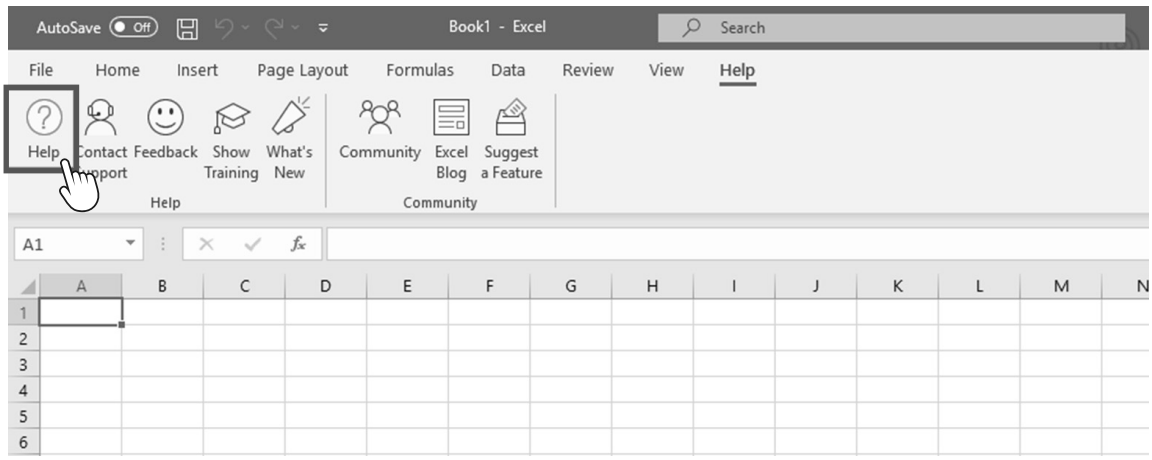
To move back and forth between any open windows (of all file types and browsers), use the combination **Alt+Tab.** Hold **Alt** and press **Tab** to browse through the files until you get to the file you are looking for.

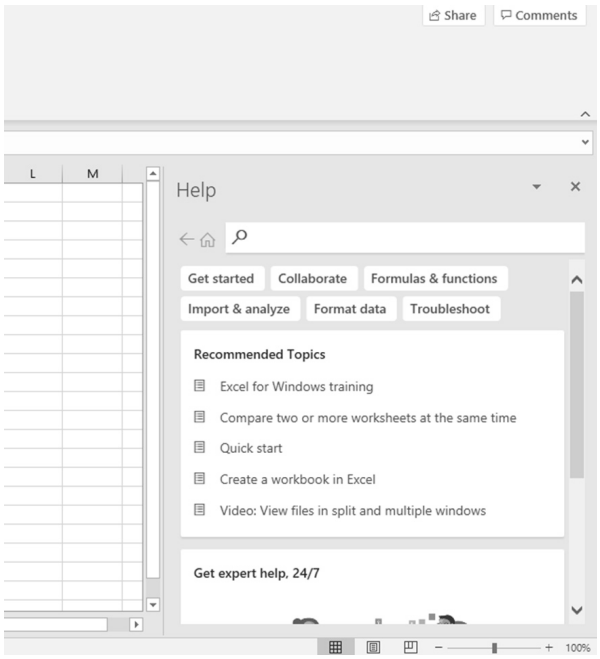
CLICKING THROUGH THE TASKBAR

Click the icon of the spreadsheet application on the taskbar. A small window will appear. Then, select the file you want to open.

USING AVAILABLE HELP FUNCTIONS

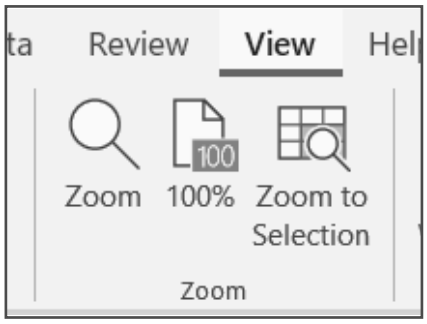
The help feature in Microsoft Office applications is usually the fastest and easiest way to get help. In Windows, access it by pressing **F1** in the application or just click the Help tab.





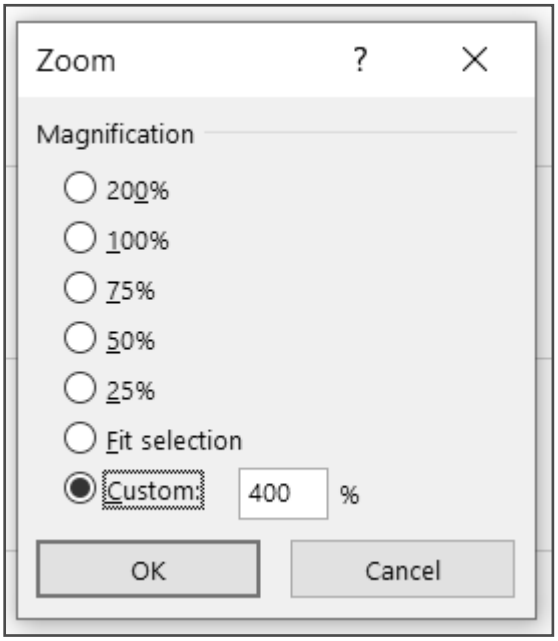
Once the help feature opens, use the search feature in the right-side task pane to find answers to your questions related to the use of spreadsheet programs. To browse for topics, open **Recommended Topics.**

ZOOM TOOLS



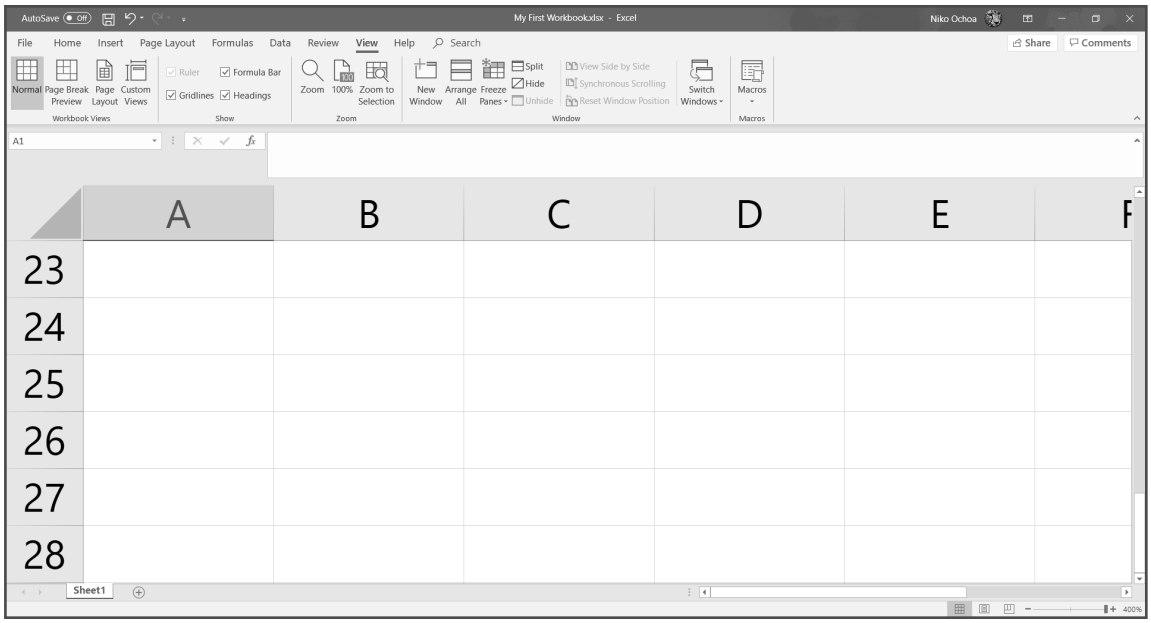
View Tab Zoom Group in Excel

Zoom tools are available in most applications such as Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Zoom tools let you zoom in or out your documents, workbooks, or presentations while working on them. You can find the zoom tools under the View tab of the application.



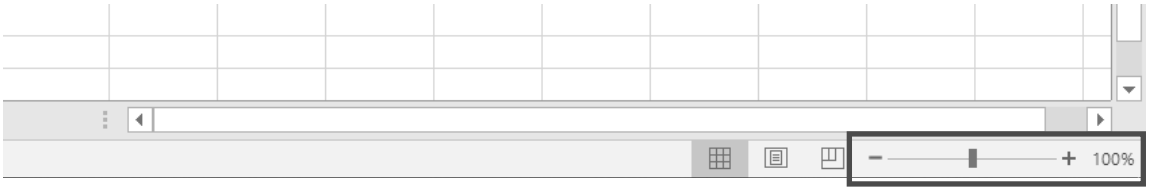
1. The default view is **100%**, but you can adjust this by clicking **Zoom.** A window with different levels of magnification to choose from will pop out, including **Fit Selection** and **Custom.**

2. **Zoom to Selection** will allow you to zoom the document up to **400%,** which is the maximum magnification. This helps you focus on a specific area of the sheet.



Zoom to Selection View

3. Alternatively, the zoom slider is available for instant zoom in and zoom out. It is located at the lower right corner of the workbook.

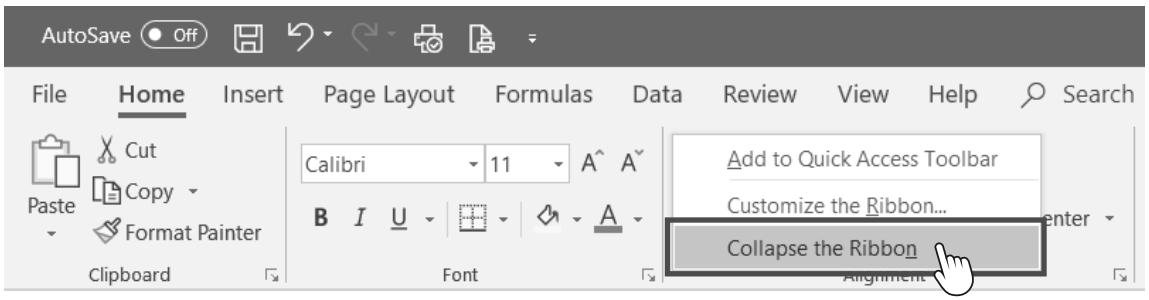


Zoom Slider

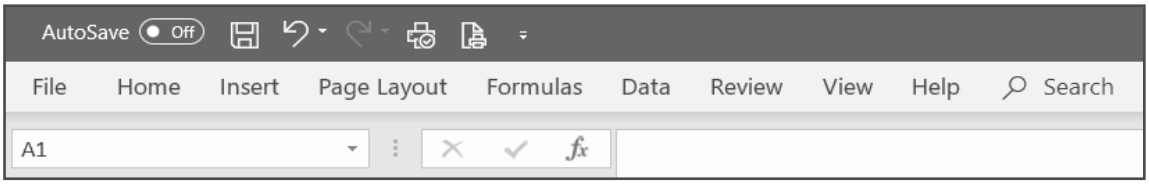
USING RIBBONS, TABS, AND THE QUICK ACCESS TOOLBAR

Ribbons are designed to help you quickly find the command that you want to execute in Microsoft Office. Ribbons are divided into logical groups called tabs, and each tab has its own set of groups with unique functions to perform. There are various tabs: **Home**, **Insert**, **Page Layout**, **Formulas**, **Data**, **Review**, and **View.**

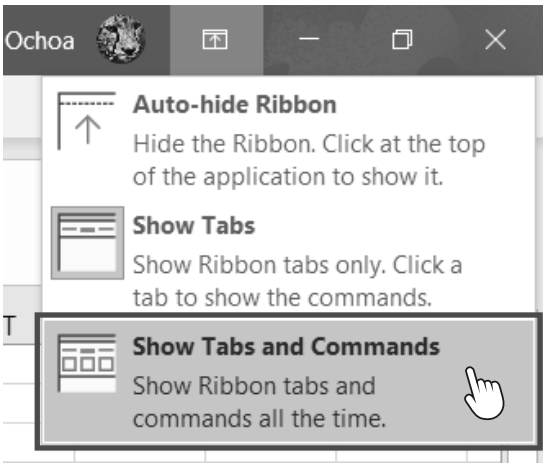
Ribbons can be hidden when you collapse or minimize ribbons. Right-click on the ribbon area and choose **Collapse the Ribbon.**



When you hide the ribbon, only the tabs will be displayed. Ribbons will only appear if you select a tab.

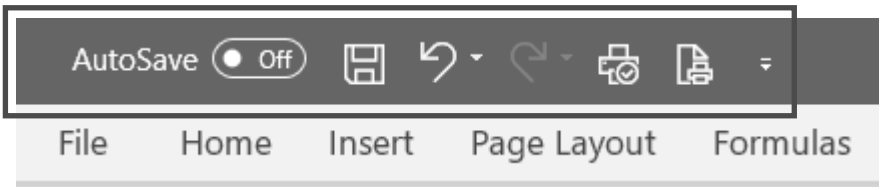


To restore the Ribbons, click the **Ribbon Display Options** at the upper right of the workbook then select **Show Tabs and Commands.**

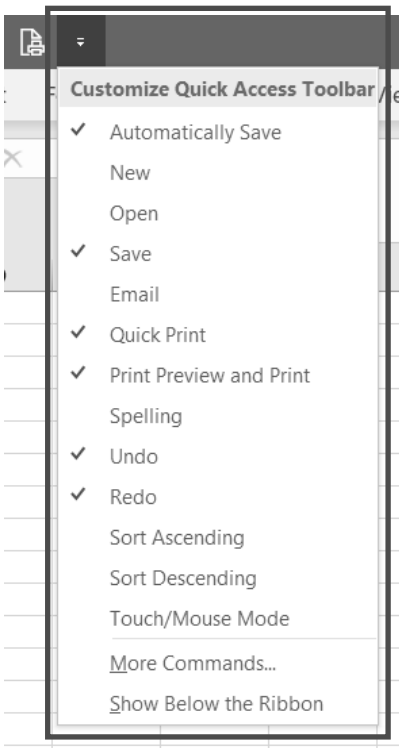


Ribbon Display Options

The **Quick Access Toolbar** is a universal toolbar that is always visible and is not dependent on the tab that you are working with. It lets you execute commands easily.



Quick Access Toolbar

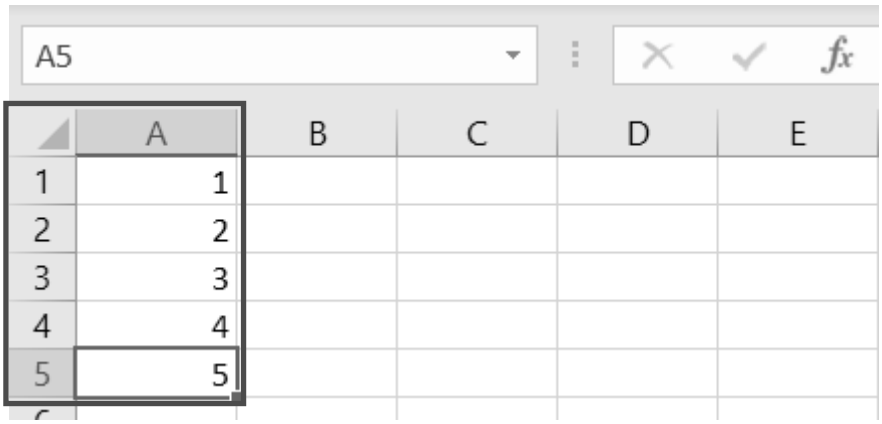


The default commands are the save, undo, and redo buttons. You can customize the toolbar by clicking on the drop-down button at the right of the toolbar and then checking the desired commands to be included on the Quick Access Toolbar.

USING SPREADSHEET CELLS

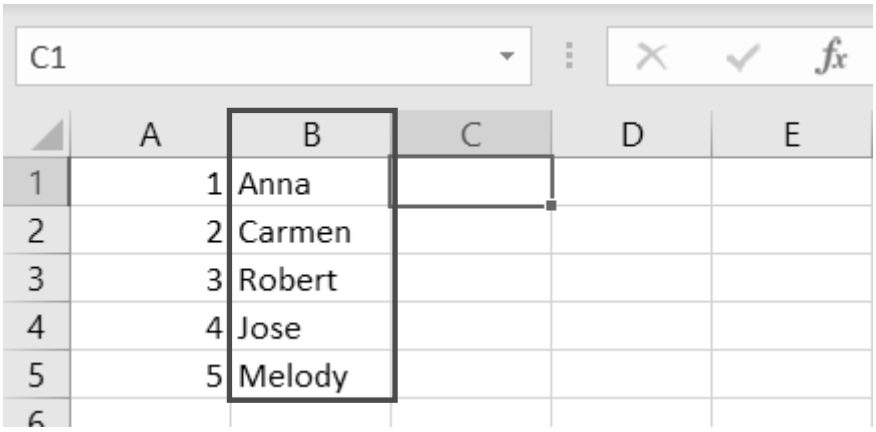
As aforementioned, a cell is made up of a row and a column. Each cell should only contain one element of data. If you are ready to insert data or content, click a cell.

1. Click the cell to insert data such as numbers, dates, and texts. Let us put data in cells A1 to A5.

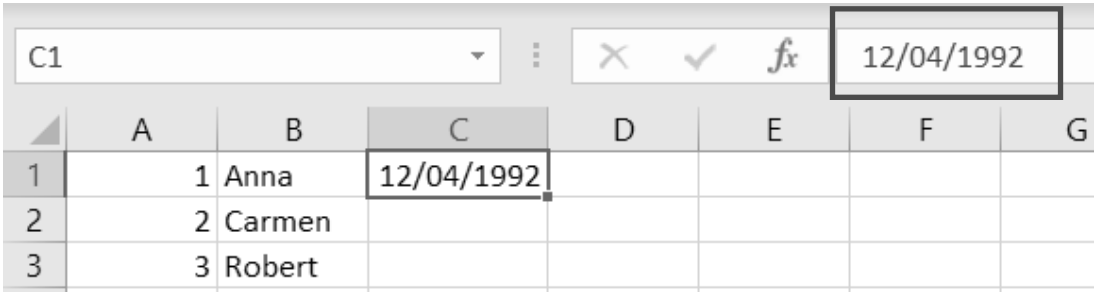


To organize your workbook, starting at the left corner of the sheet is recommended.

2. Let us put names as text beside each number in cells B1 to B5.

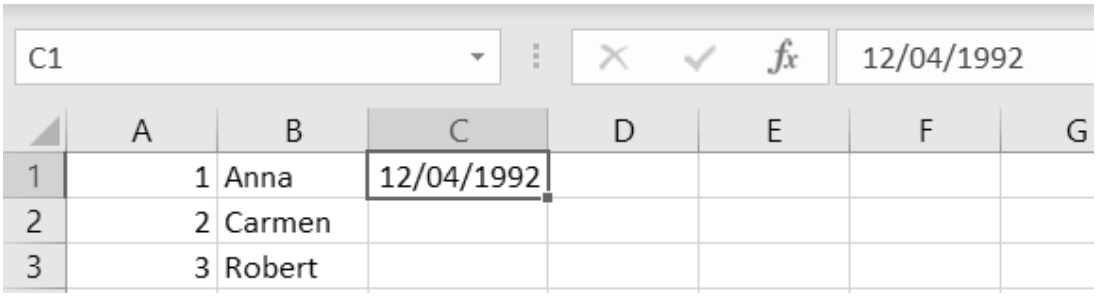


3. Then, insert birthdates on C1 to C5 in mm/dd/yyyy format.



Notice that the inserted date can be seen in the formula bar.

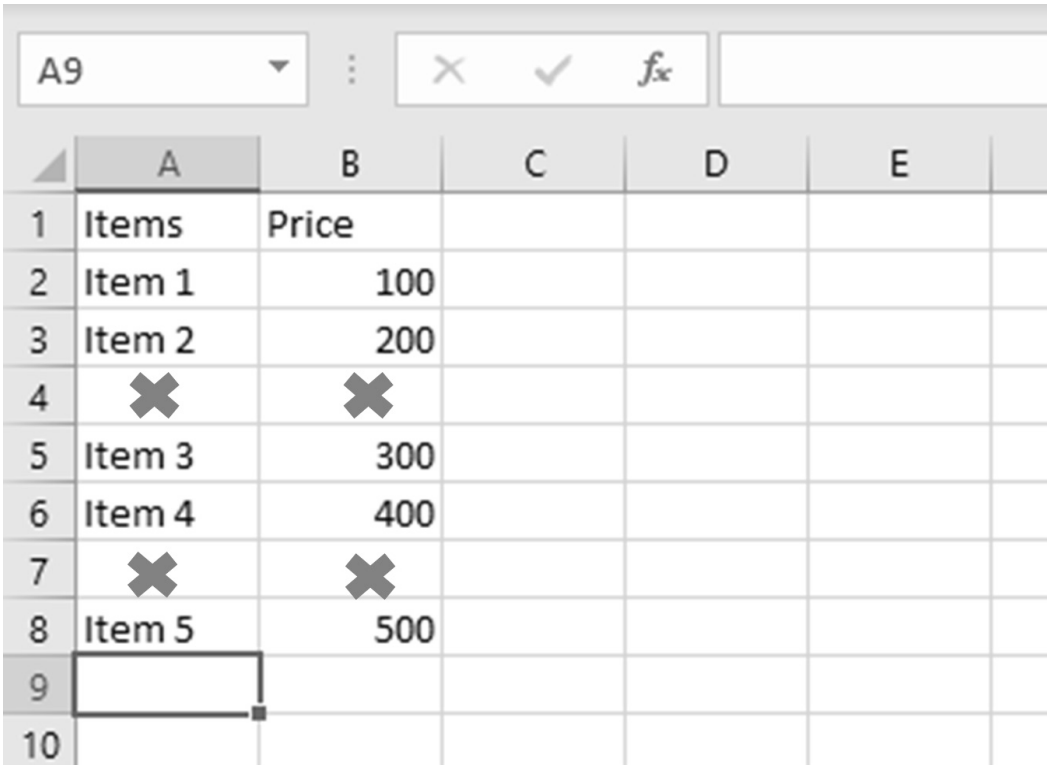
4. If the data is longer than the width, put your cursor on the right side of the header and drag to adjust the column headers. Use the same process to adjust the rows.



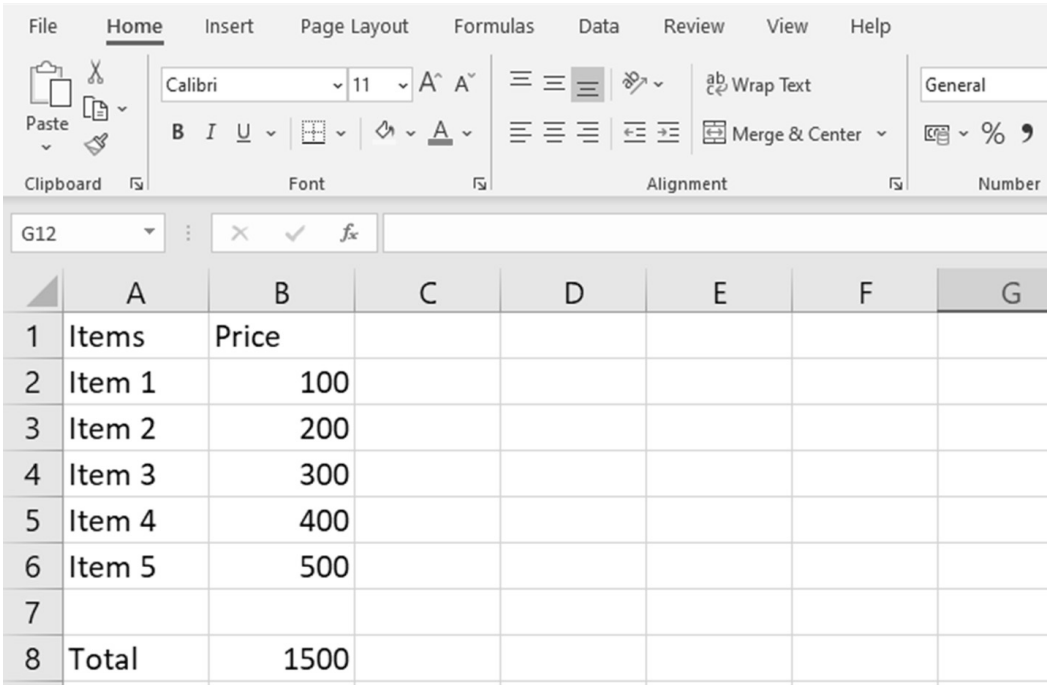
CREATING LISTS

When creating lists of data in a spreadsheet, remember the basics to for better results. Examine the sample illustrations below.

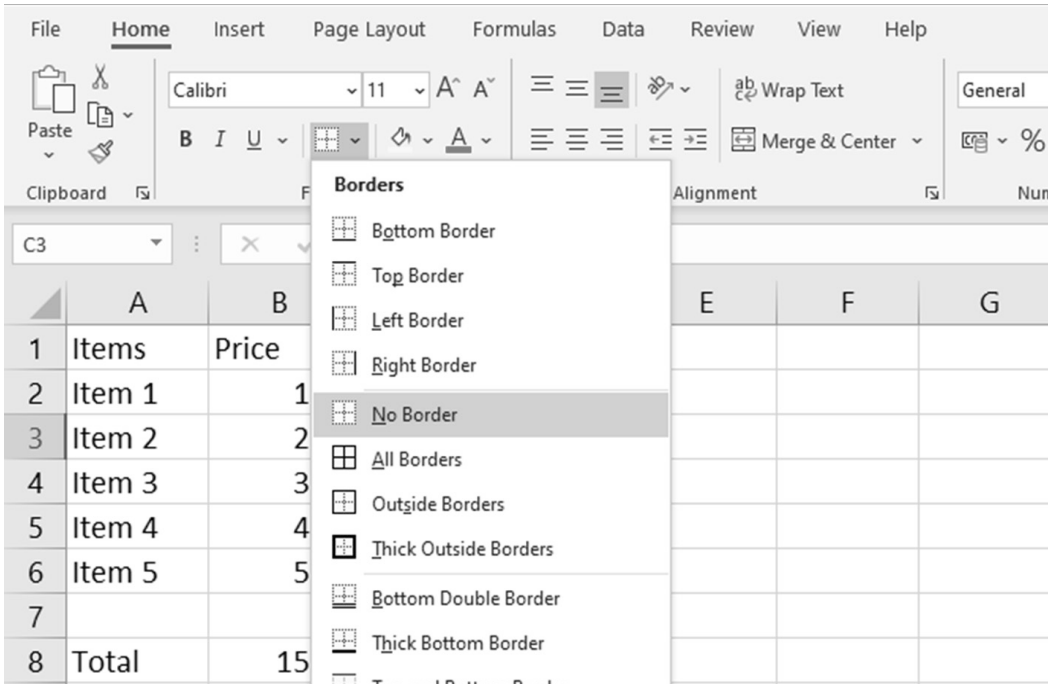
1. Avoid blank rows and columns in the main body of the list. It may look unpleasing to the eye, and the data may look disorganized.



2. If your list needs to have a total row like the example on the next page, it is best to put a blank row before the total row to separate the final data from the main list.
3. Ensure that the cell bordering lists are blank. It is better not to put borders to main lists to avoid confusion, especially if you are going to insert rows between data in the future. Apply **No Border** found on the Font group to remove the cell borders.



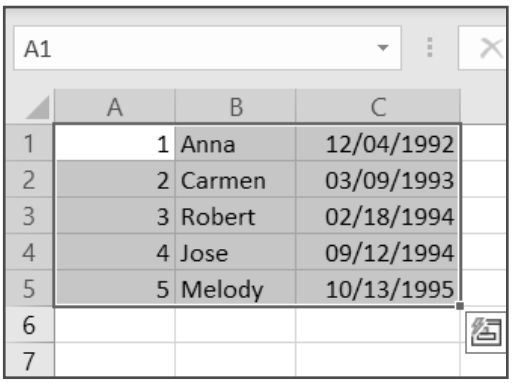
Step 2. Insert a Blank Row Before the Total Row



Step 3. Ensure Cell Bordering Lists are Blank.

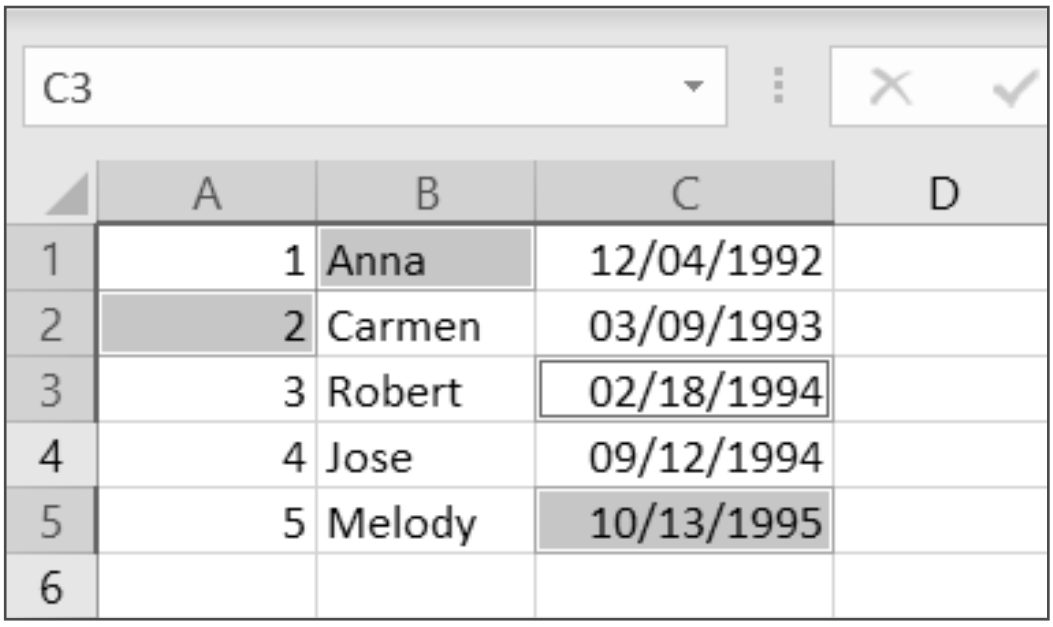
SELECTING CELLS AND WORKSHEETS

1. To select a single cell, click the cell using your mouse or use the arrows keys on the keyboard.



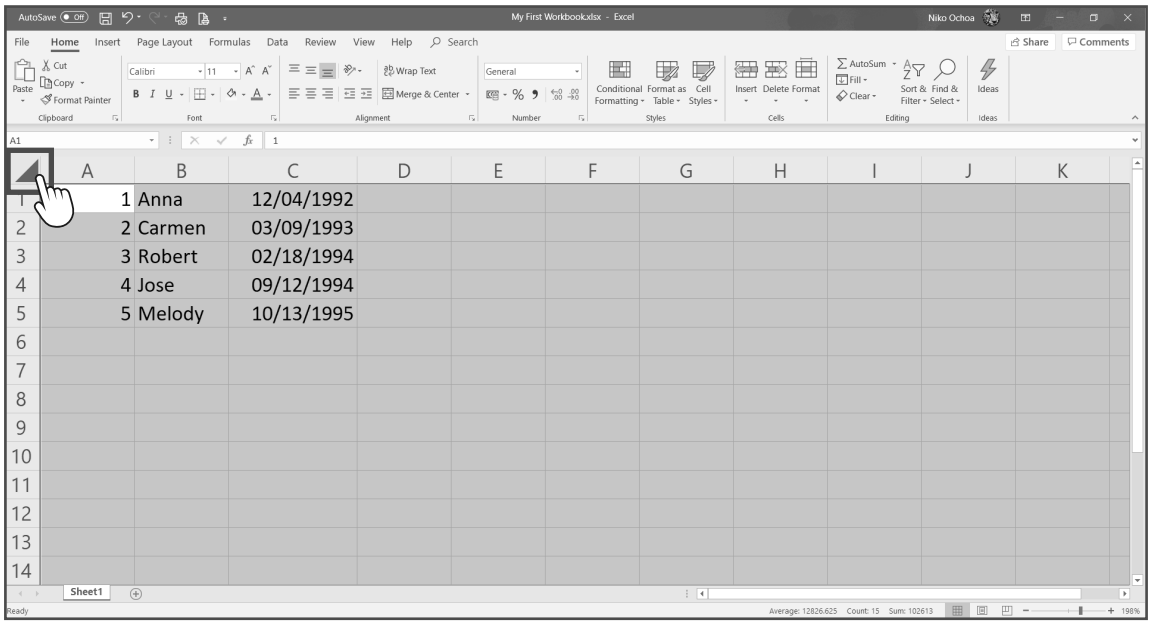
2. To select a range of cells, hold the left button of your mouse and drag from the start of the range up to the end. You may also use the arrow keys while holding the Shift key in the keyboard.

3. To select a nonadjacent cell or cells, click each cell while holding the Ctrl key on the keyboard.



Selecting Nonadjacent Cells

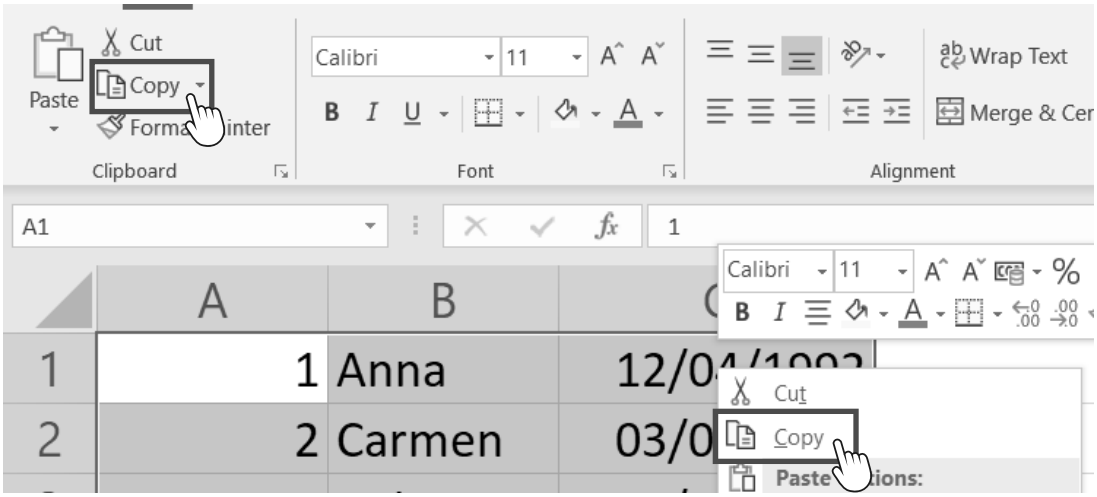
4. If you want to select the entire worksheet, click the triangle at the corner of A1.



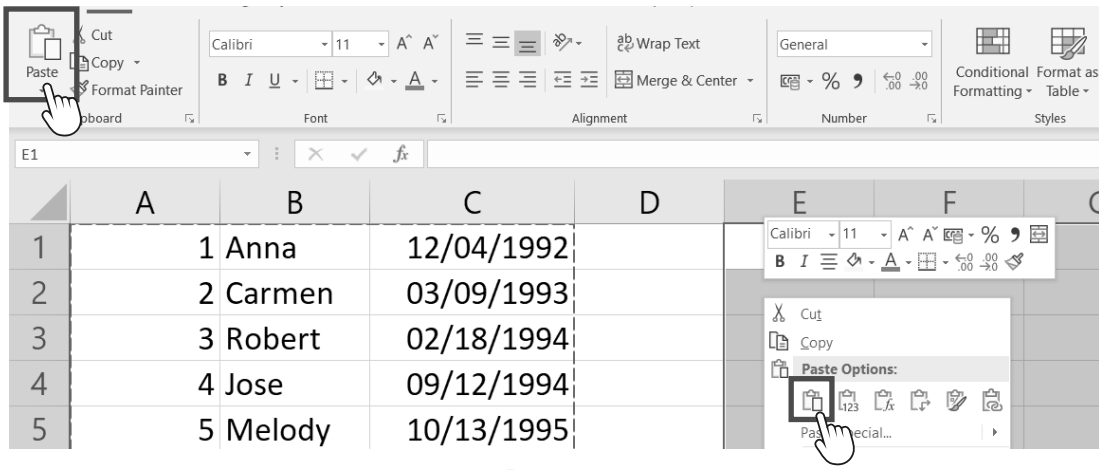
Selecting the Entire Worksheet

COPYING AND MOVING CELL CONTENTS

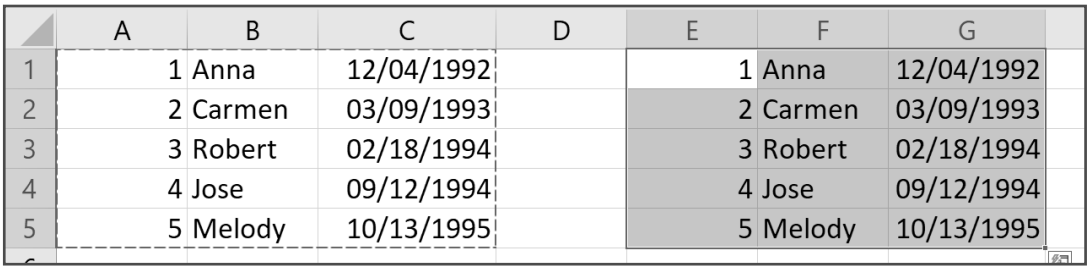
1. To copy cell content, follow the steps we previously discussed on selecting cells then click **Copy** in the Clipboard group on the Home tab, or press **Ctrl+C** on your keyboard. You can also right-click on the selected cells and choose **Copy.**



2. Select the cell or cells where you want to paste the content then click the Paste command on the Home tab, or press **Ctrl+V** on your keyboard. Alternatively, right-click on a blank cell, choose **Paste Options**, and click **Paste.**



Pasting content

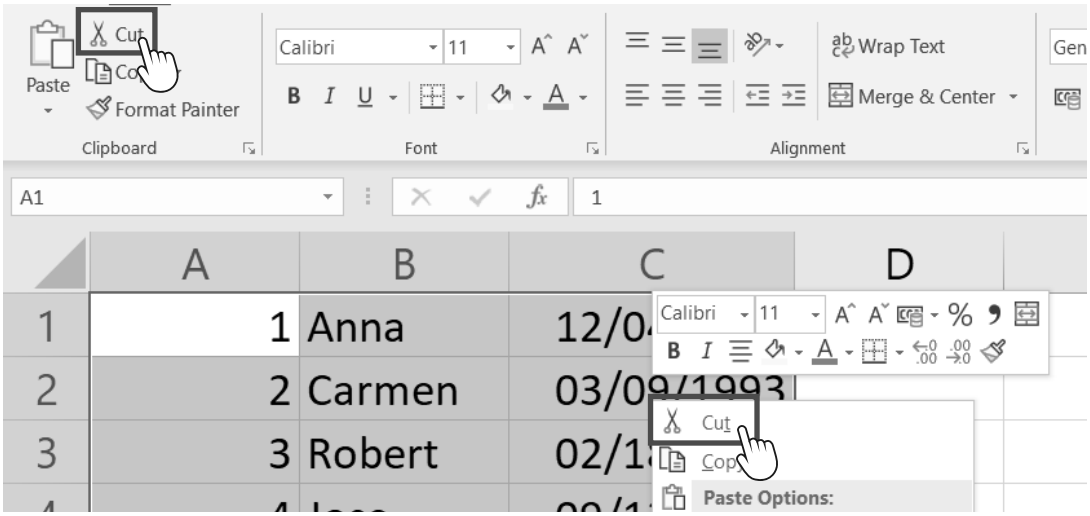


Successful paste

3. To move contents in a cell, select the cell or cells to be moved then click **Cut** on the Home tab. You may also press **Ctrl+X** on the keyboard, or right-click on the selected cells and choose **Cut.** The Cut command will remove the contents from its origin and transfer them to your chosen cell.

4. Select the cells where you want to move your content then click **Paste.**

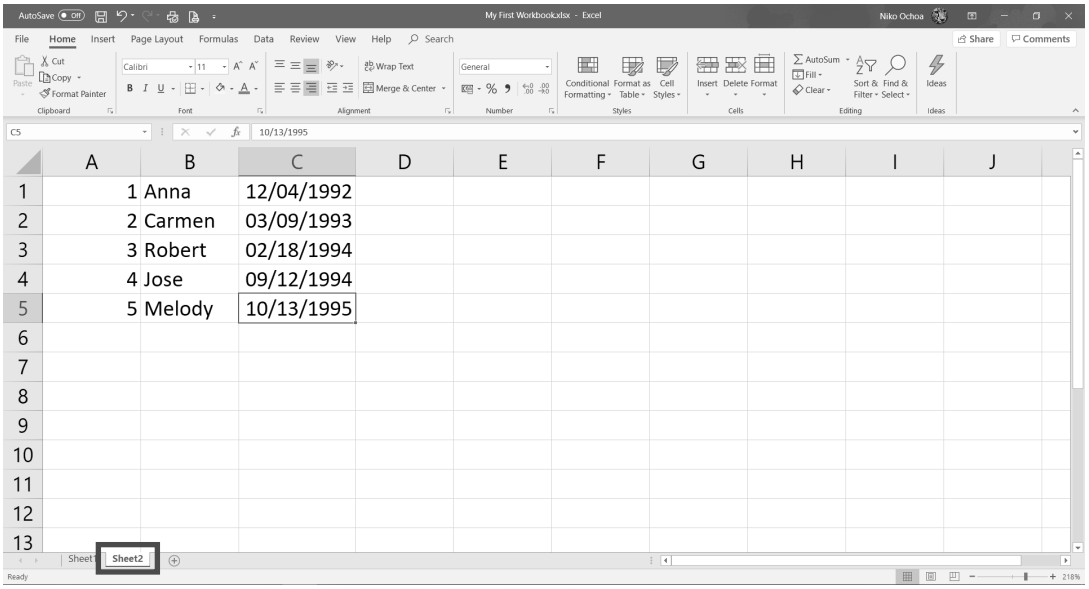
5. You can also copy or move cell contents from one sheet to another or between open workbooks. Do the same procedure in copying contents in a worksheet.



Step 3. Moving Contents in a Cell (Cutting Contents)

	A	B	C	D	E	F	G	H
1					1	Anna	12/04/1992	
2					2	Carmen	03/09/1993	
3					3	Robert	02/18/1994	
4					4	Jose	09/12/1994	
5					5	Melody	10/13/1995	

Step 4. Successful Paste



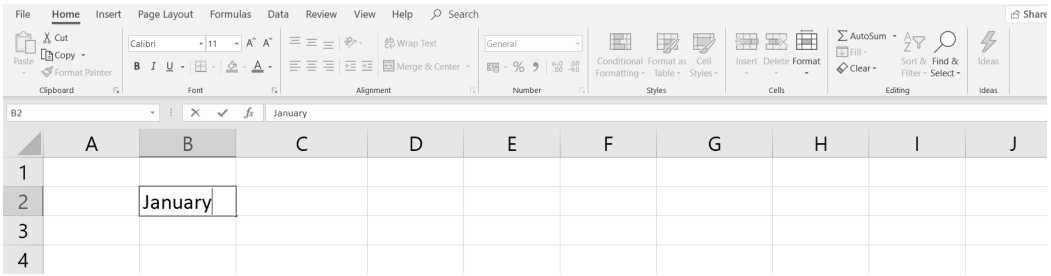
Step 5. Copying or Moving Cell contents from One Sheet to Another or Between Open Workbooks

6. To remove or delete cell contents, select the cells to be deleted then press **Del** on the keyboard.

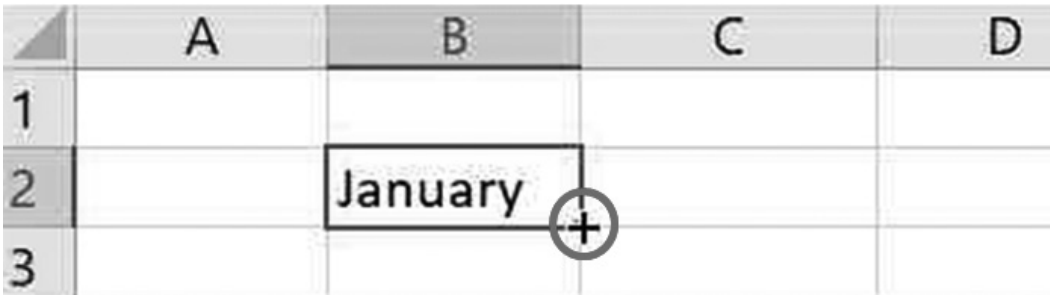
USING THE AUTOFILL TOOL

Instead of entering data manually, Microsoft Excel has a feature called **AutoFill** that lets you fill cells automatically. It may either follow a pattern or base on data from other cells.

1. To use AutoFill, let us enter a text in a cell. In this example, let us type a month, say, *January*.

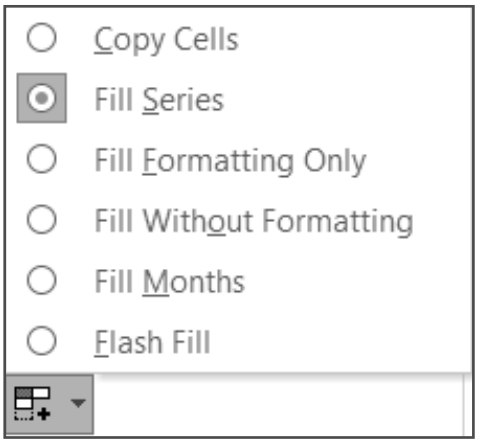


2. Point your mouse on the lower right corner of the cell. You should see a solid cross pointer; this is called the **fill handle.**

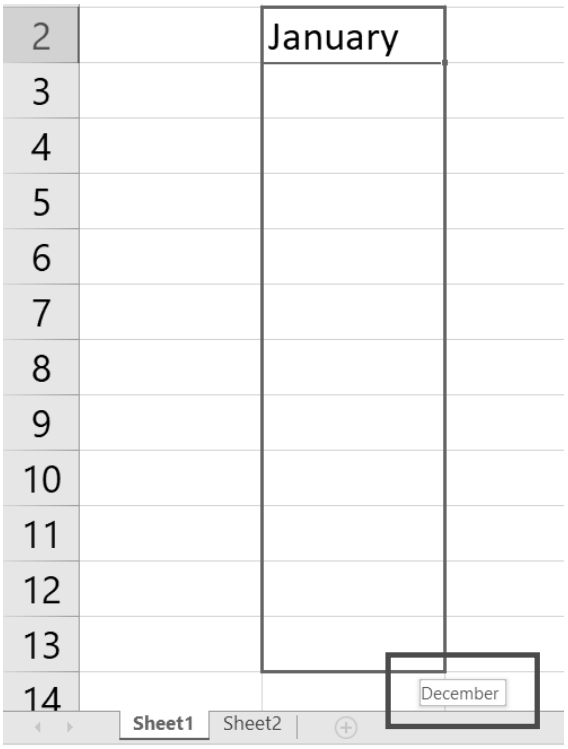


3. Hold the mouse's left button and drag down the pointer. You will be guided by a tool tip indicating the next content.

4. **AutoFill Options** will appear after your use the fill handle. When you click the button, the options for AutoFill will be displayed.



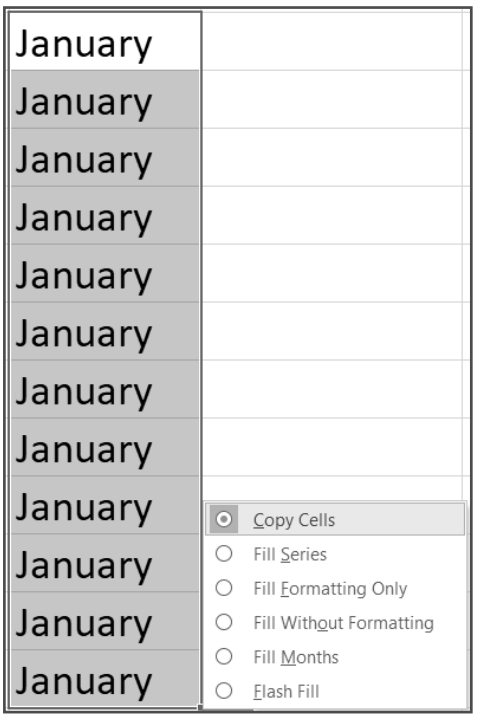
AutoFill Options



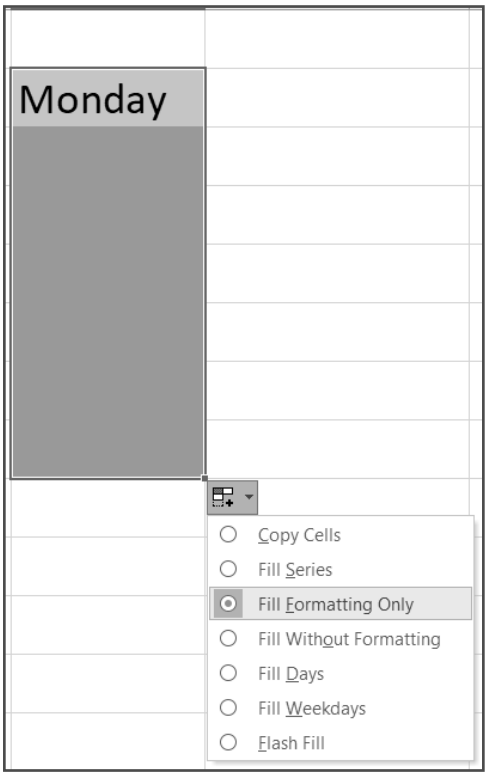
5. The default selection is **Fill Series**. **Copy Cells** will not follow a pattern; it will only copy the selected word.

If you want to copy the format of the cell but not the content, choose **Fill Formatting Only.** If you want to copy the content of the cell but not the format, choose **Fill Without Formatting.**

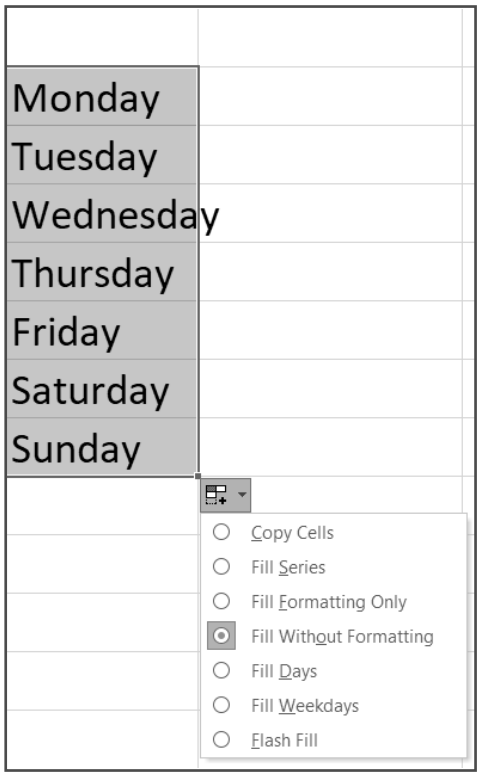
Autofill can also be done horizontally; just follow the same steps, but this time, drag your mouse to the right.



Copy Cells AutoFill Option

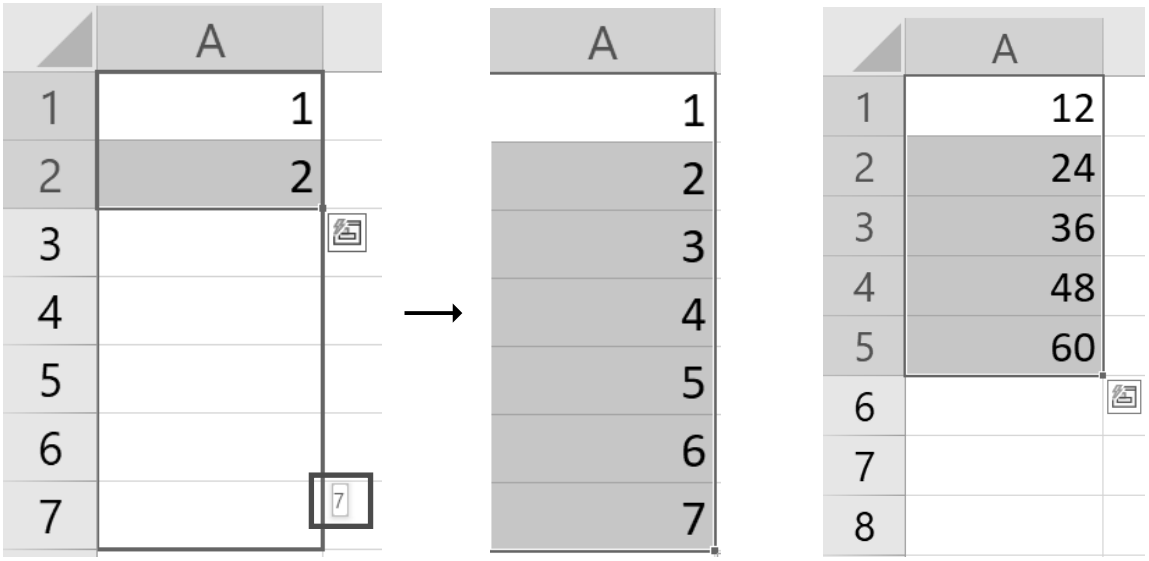


Fill Formatting Only



Fill Without Formatting

AutoFill can add incremental data entries if the data is numerical or alphanumeric. Enter any starting value in a cell. Enter the next value in the cell below it to establish a pattern. Select those two cells and drag the bottom fill handle down the column to create a series of incremental numbers.



For example, entering 12 and 24 in cells A1 and A2 would create the series 12, 24, 36, 48, 60 when copied down to cell A5.

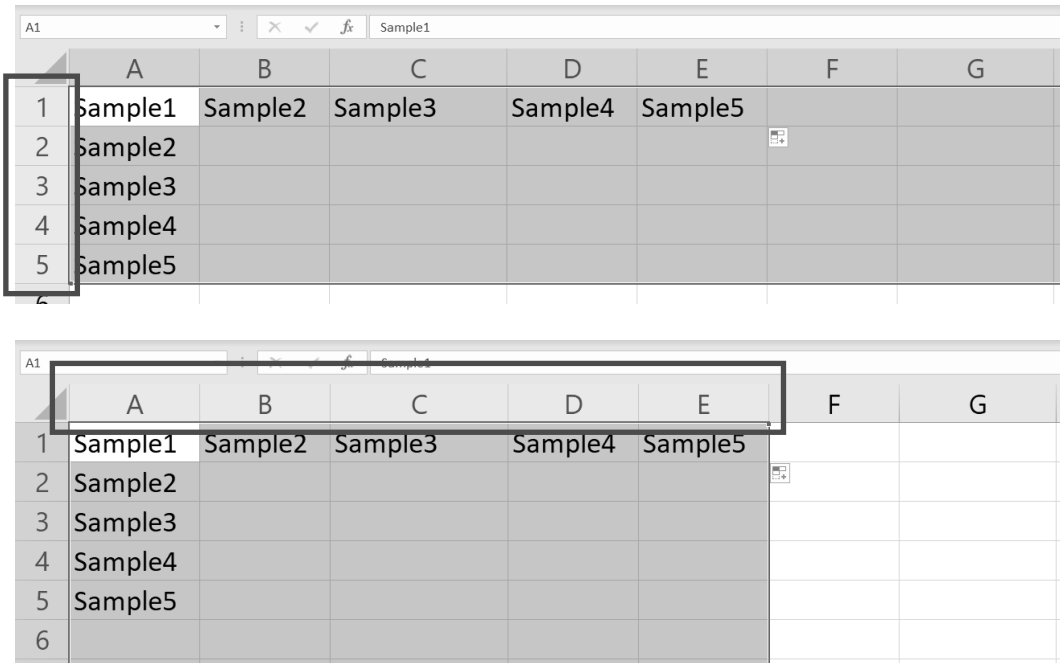
For alphanumeric, the fill handle will create incremental data. Enter a starting value in any cell and use the fill handle vertically or horizontally.

	A	B	C	D	E
1	Sample1	Sample2	Sample3	Sample4	Sample5
2	Sample2				
3	Sample3				
4	Sample4				
5	Sample5				

SELECTING ROWS AND COLUMNS

1. To choose a row or a column, click the row header (number) or column header (letter).

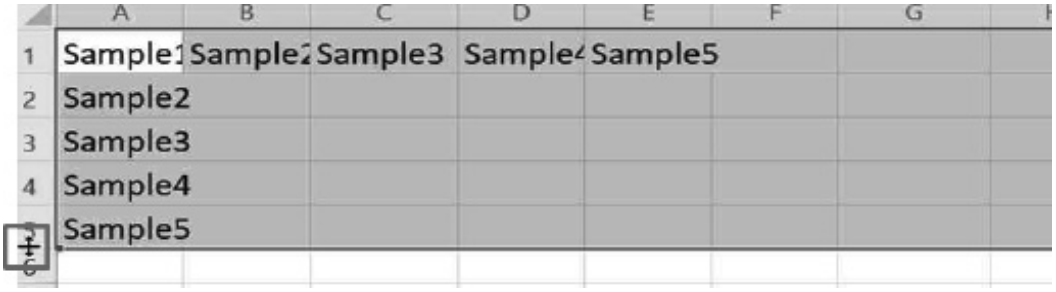
2. To click more than one row or column, click and hold the headers, hold the left button, and drag the mouse vertically or horizontally.

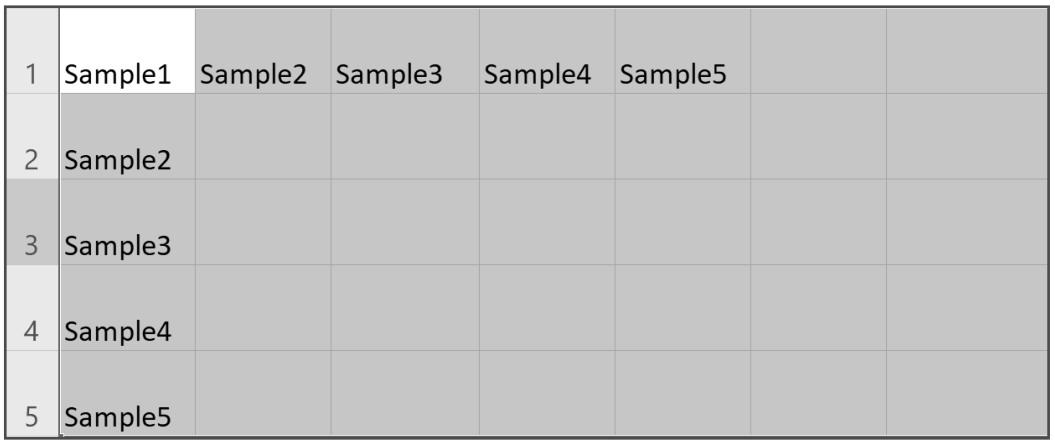


3. To select nonadjacent rows and columns, click the headers of the desired rows and columns while pressing the Ctrl key on the keyboard.

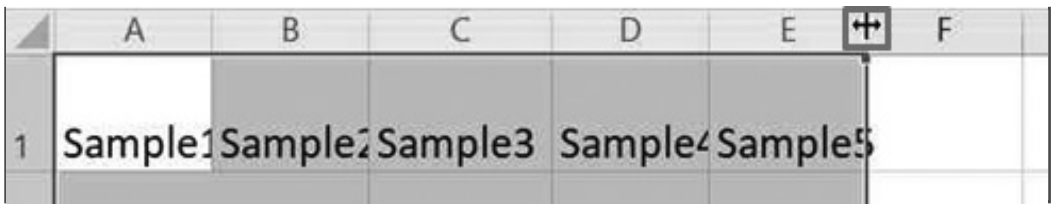
ADJUSTING ROW HEIGHT AND COLUMN WIDTH

1. To adjust the row height, select the row headers to be adjusted and then point your mouse to the last selected row header. Double-click or resize it manually by holding the left button while dragging down the headers.





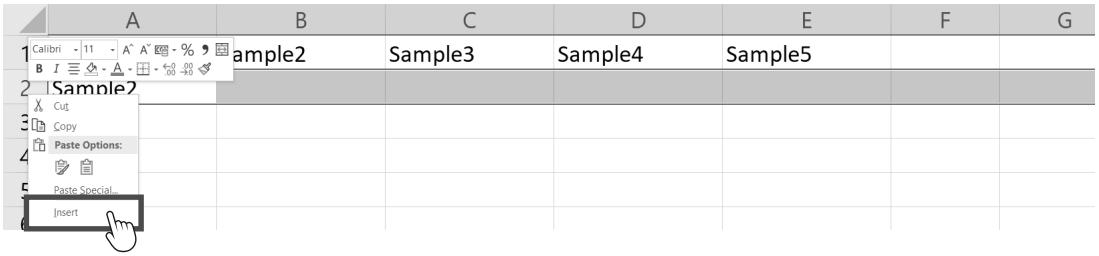
2. To adjust the column width, select the column headers to be adjusted and then point your mouse to the last selected column header. Double-click or resize it manually by holding the left click while dragging the headers to the left or to the right.



	A	B	C	D	E	F	G
1	Sample1	Sample2	Sample3	Sample4	Sample5		
2	Sample2						
3	Sample3						
4	Sample4						

INSERTING AND DELETING ROWS AND COLUMNS

1. To insert a row in between, right-click on the row header and click **Insert.**

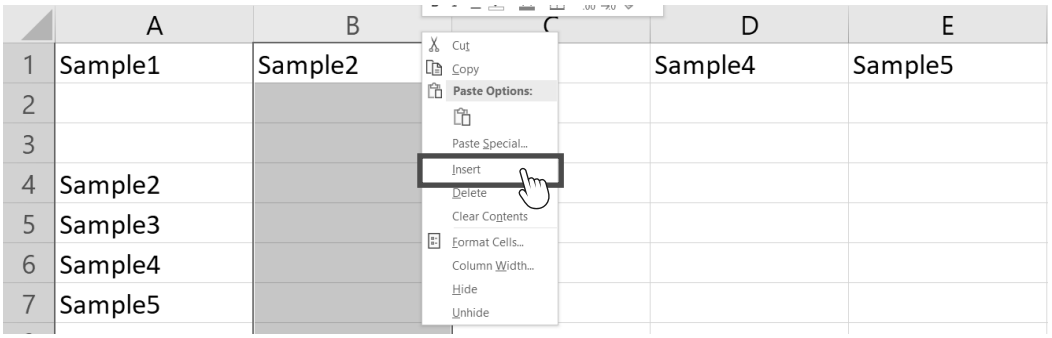


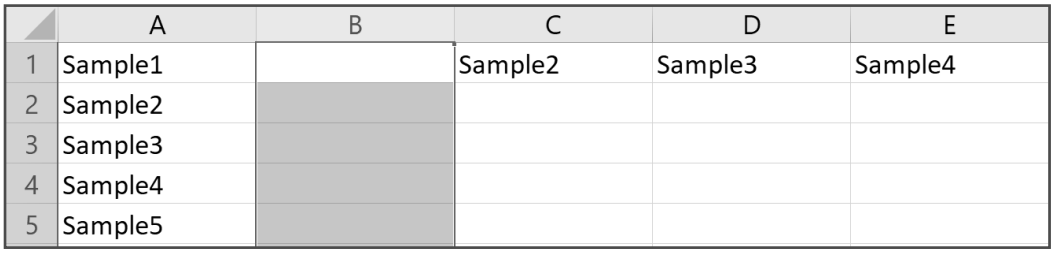
2. To insert more than one row, select the desired number of row headers and click **Insert.** The selected rows correspond to the number of new rows.

	A	B	C	D	E	F	G
1	Sample1	Sample2	Sample3	Sample4	Sample5		
2	Sample2						
3	Sample3						
4	Sample4						
5	Sample5						

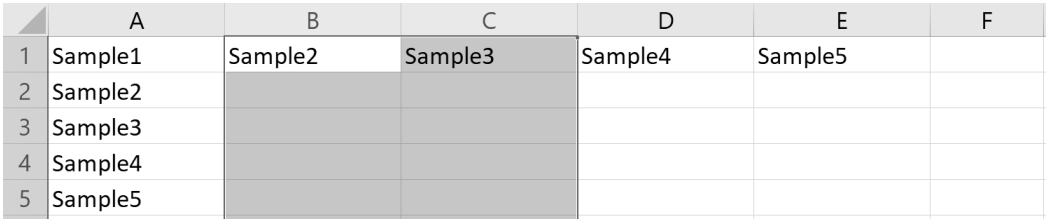
	A	B	C	D	E	F	G
1	Sample1	Sample2	Sample3	Sample4	Sample5		
2							
3							
4	Sample2						
5	Sample3						
6	Sample4						
7	Sample5						

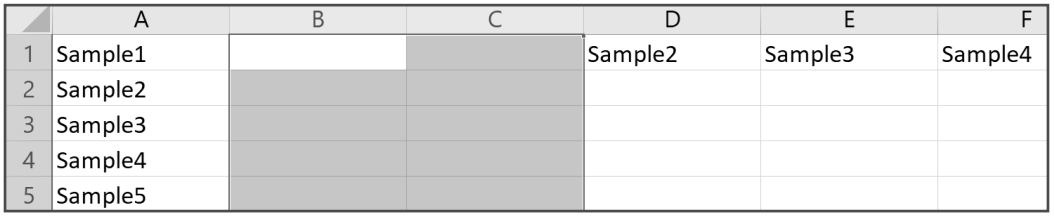
3. To insert a column in between, right-click the column header and click **Insert.**





4. To insert more than one column, select the desired number of column headers then click **Insert**. The selected columns correspond to the number of new columns.

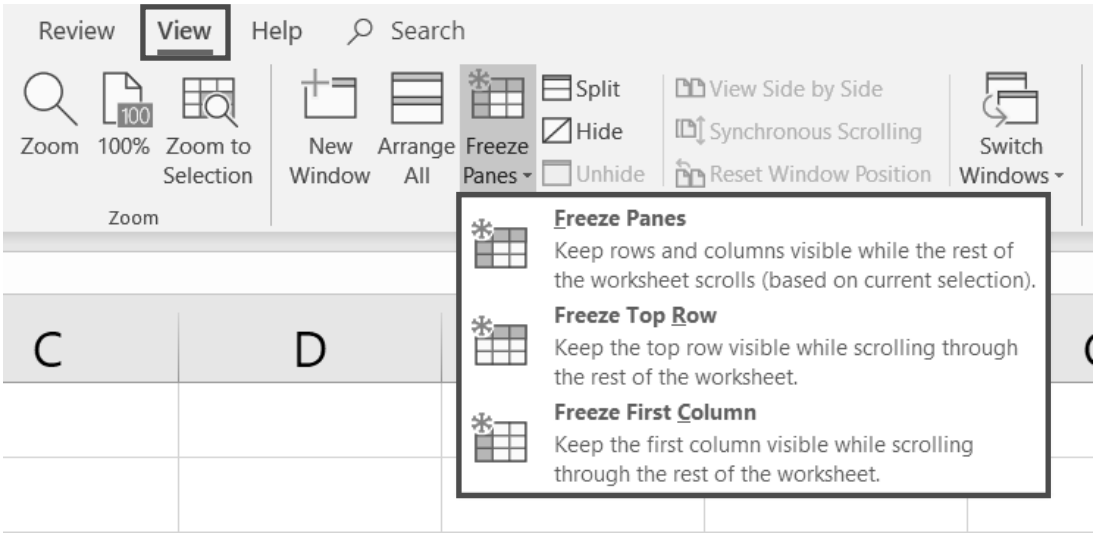




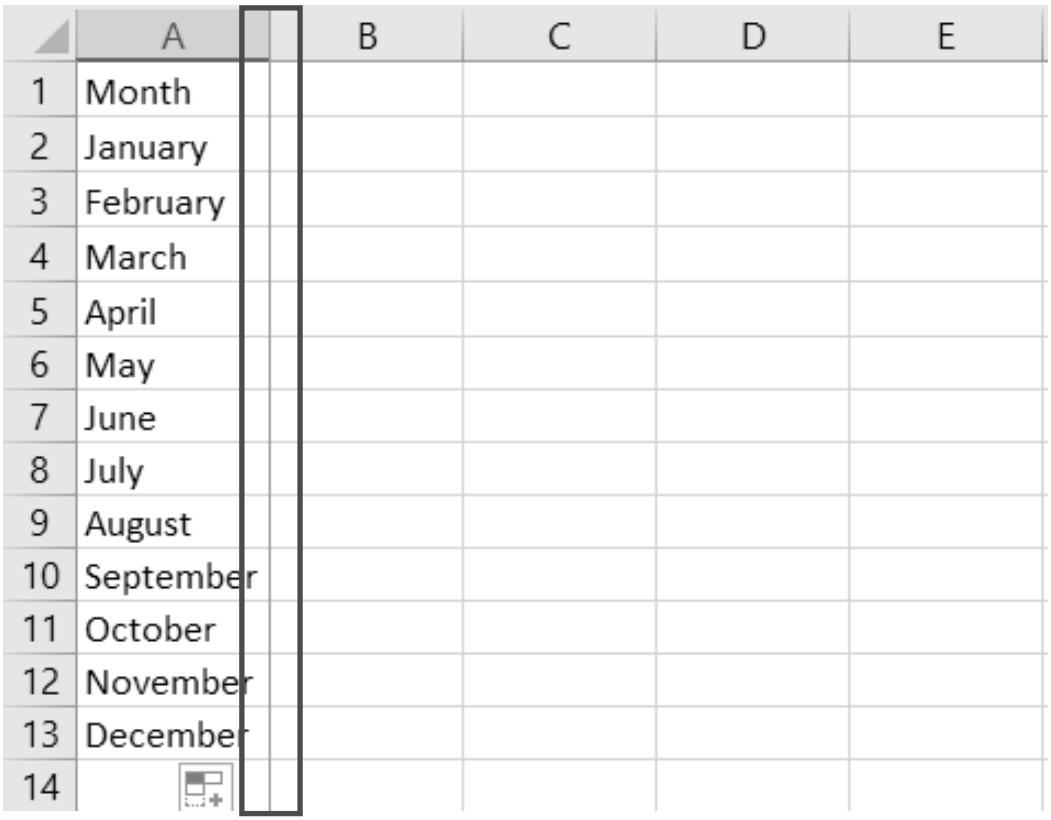
5. To delete cells, do the same procedure in inserting rows or columns, but instead of **Insert**, click **Delete.**

FREEZING AND UNFREEZING PANES

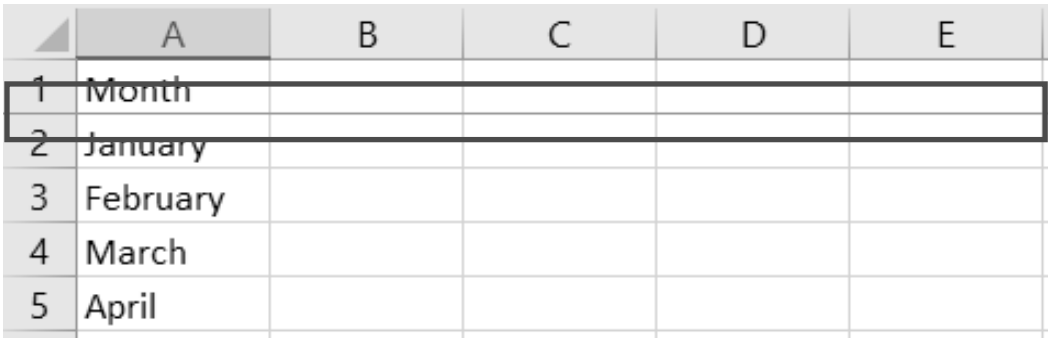
1. To keep an area of a worksheet visible while you scroll to another area of the worksheet, go to the View tab and click **Freeze Panes** to lock specific rows and columns in place.



2. To freeze the first column, click **Freeze First Column**; to freeze the top row, click **Freeze Top Row.** You will see a faint line between the first column and the second column. It indicates that the first column was locked or frozen.



	A	B	C	D	E
1	Month				
2	January				
3	February				
4	March				
5	April				
6	May				
7	June				
8	July				
9	August				
10	September				
11	October				
12	November				
13	December				
14					



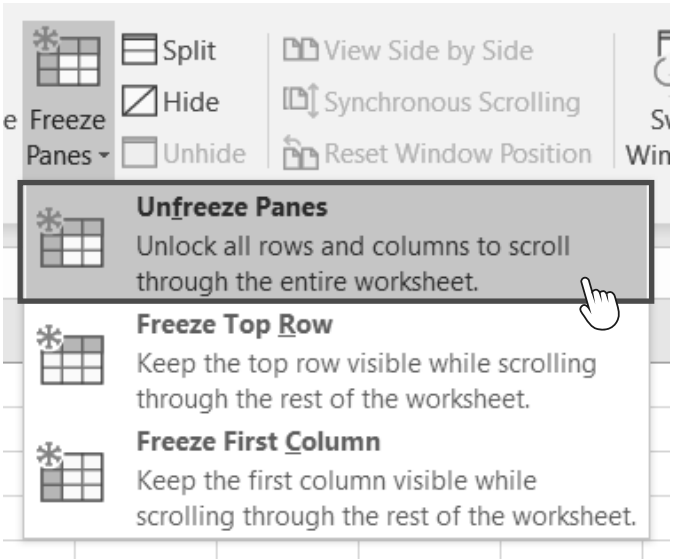
	A	B	C	D	E
1	Month				
2	January				
3	February				
4	March				
5	April				

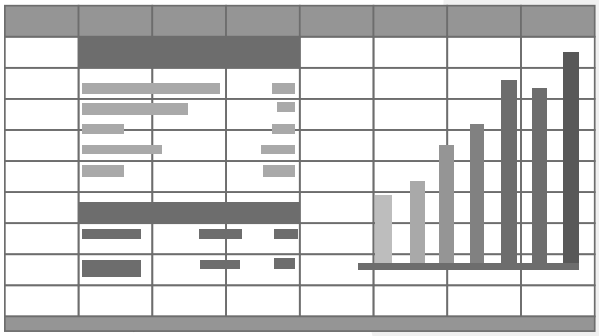
3. Aside from the first column, you can also freeze two or more columns and rows. Example if you want to freeze the first and second column, you need to choose the third column and then click **Freeze Panes** on the View tab.

	A	B	C	D	E	F	G
1	Month	Day					
2	January						
3	February						
4	March						
5	April						
6	May						
7	June						
8	July						
9	August						
10	September						
11	October						
12	November						
13	December						

4. The same procedure will be applied for the rows. Freezing panes is very helpful if you are working with big or long worksheets. The effect will be seen upon scrolling from left to right or from up to down.

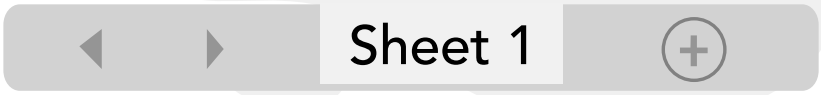
5. To unfreeze the panes, simply click **Unfreeze Panes.**





CUSTOMIZING WORKSHEETS

You can only see one worksheet upon opening a workbook, and its default name is "Sheet1." You can add more sheets, and each sheet added will have their names change incrementally.



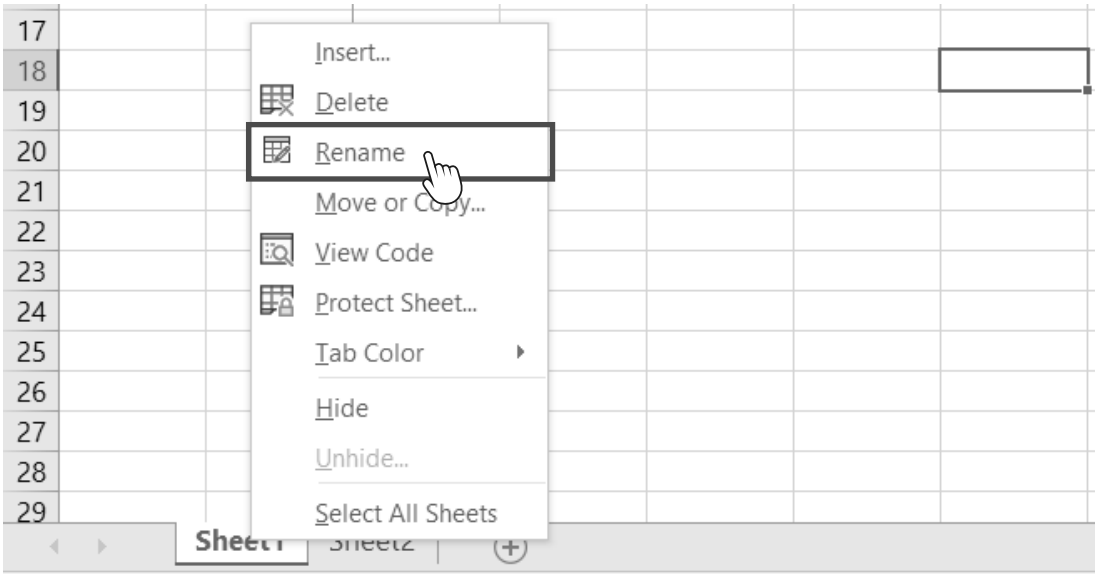
ADDING WORKSHEETS

1. To add another sheet, click the plus sign button beside Sheet1.

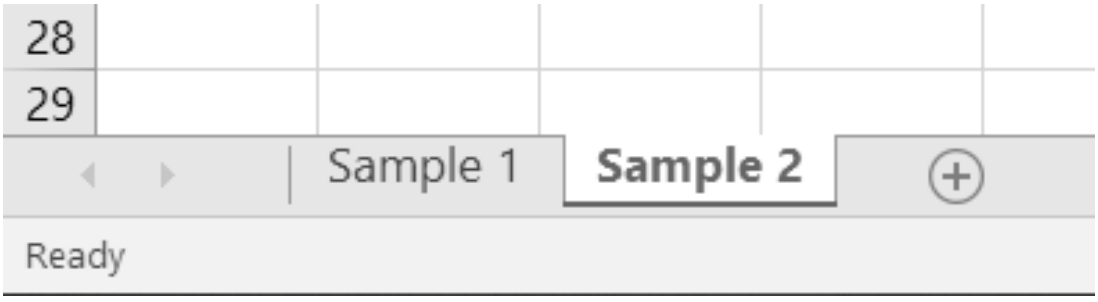
2. A new sheet will appear with Sheet2 as the name. You can continue doing this if you need more worksheets.

RENAMING A WORKSHEET

1. To rename a worksheet, right-click on the worksheet to be renamed then select **Rename.** Type a meaningful worksheet name that is related to your task. Let us rename our worksheet to "Sample 1" and "Sample 2."



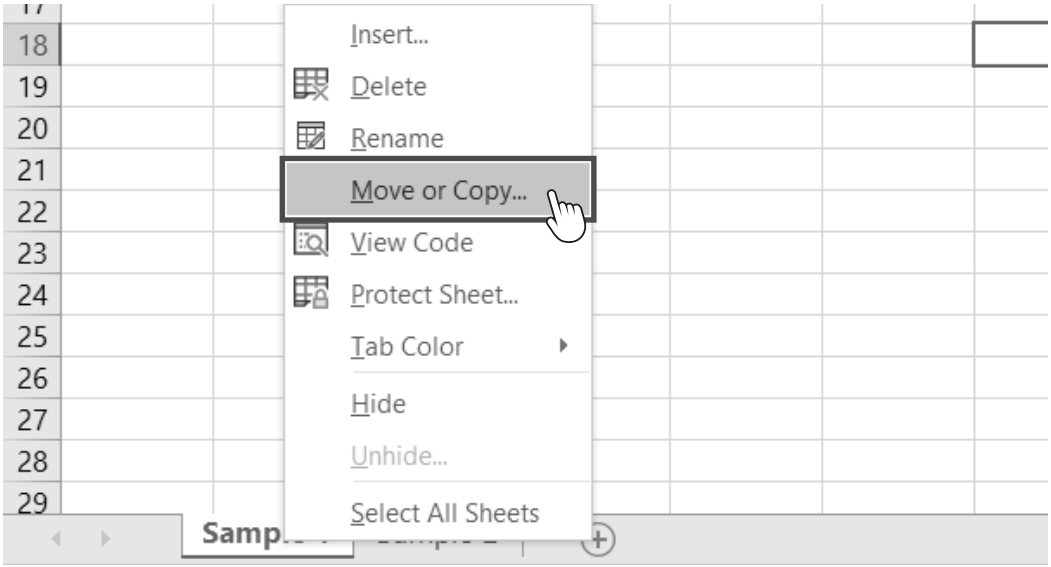
2. Do the same procedure to all the worksheets that you will add.



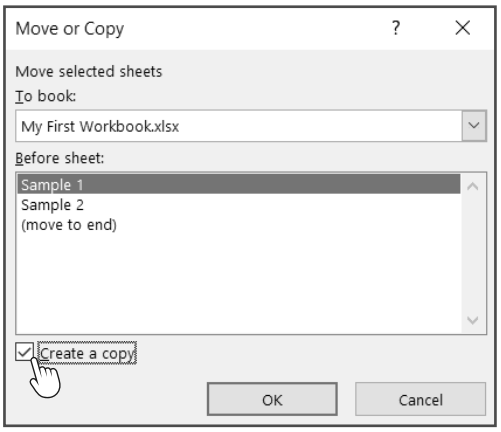
3. To switch between worksheets, just click the sheet that you want to work on.

COPYING, MOVING, AND DELETING WORKSHEETS

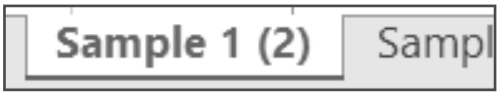
1. To copy a worksheet, right-click the worksheet to be copied then click **Move or Copy...**

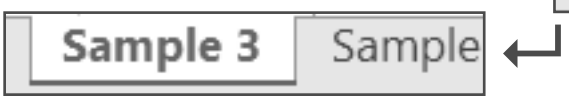


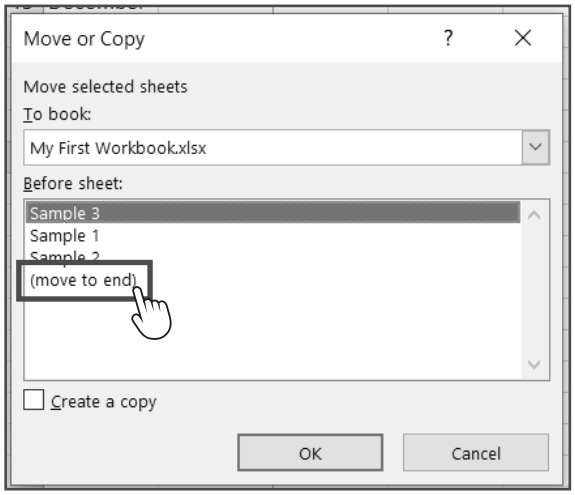
2. A dialog box will appear with a list of existing worksheets. Check **Create a copy.**



3. A duplicate worksheet will appear with the same name but with "(2)" because Excel does not accept worksheets with the same names. You can also change it to your desired name.



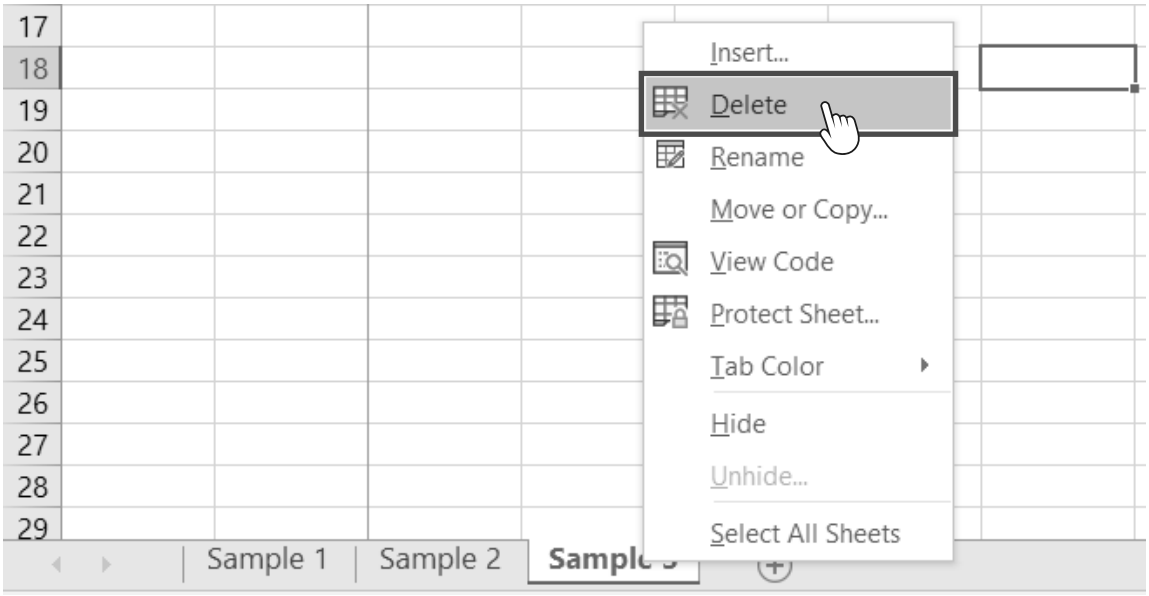




4. To move worksheets, right-click the sheet to be moved then select **Move** or **Copy** and choose **(move to end)**. Click **OK.**

   Here, Sample 3 was moved to the end after all the existing sheets. Moving can also be as easy as dragging the worksheet to your desired place.

5. To delete a worksheet, click the worksheet to be deleted, right-click, and then choose **Delete.**

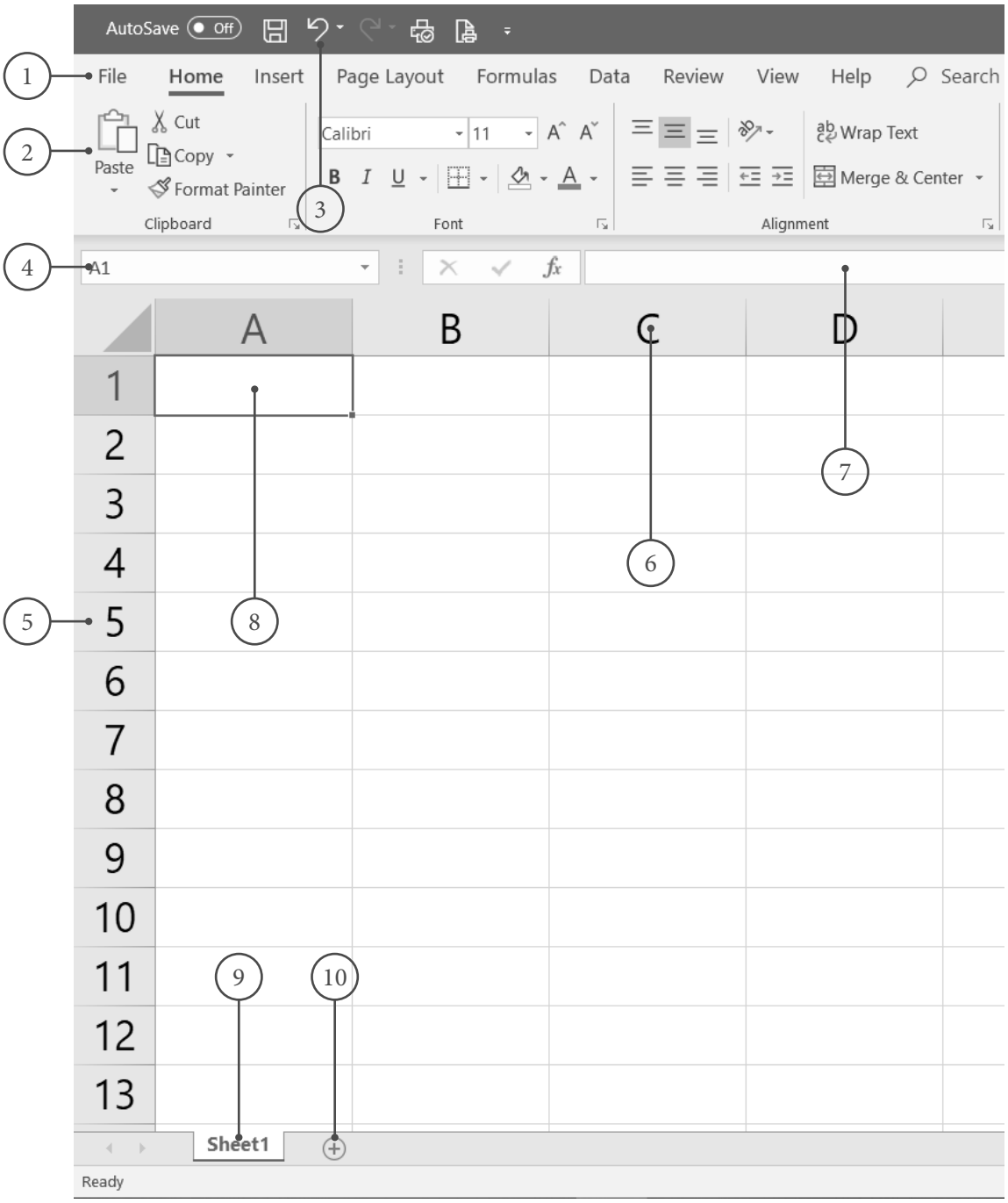


Microsoft Excel has a Graphical User Interface (GUI) that facilitates easy navigation among cells and worksheets.

LESSON 1

SHARPENING YOUR SKILLS

I. **Directions:** Identify the parts of Microsoft Excel. Write your answers on a separate sheet of paper.



II. **Directions:** List down the steps of the following commands in the spreadsheet program. Write your answer on a separate piece of paper.

Selecting Rows and Columns

1.
2.
3.

Inserting and Deleting Rows and Columns

1.
2.
3.
4.
5.

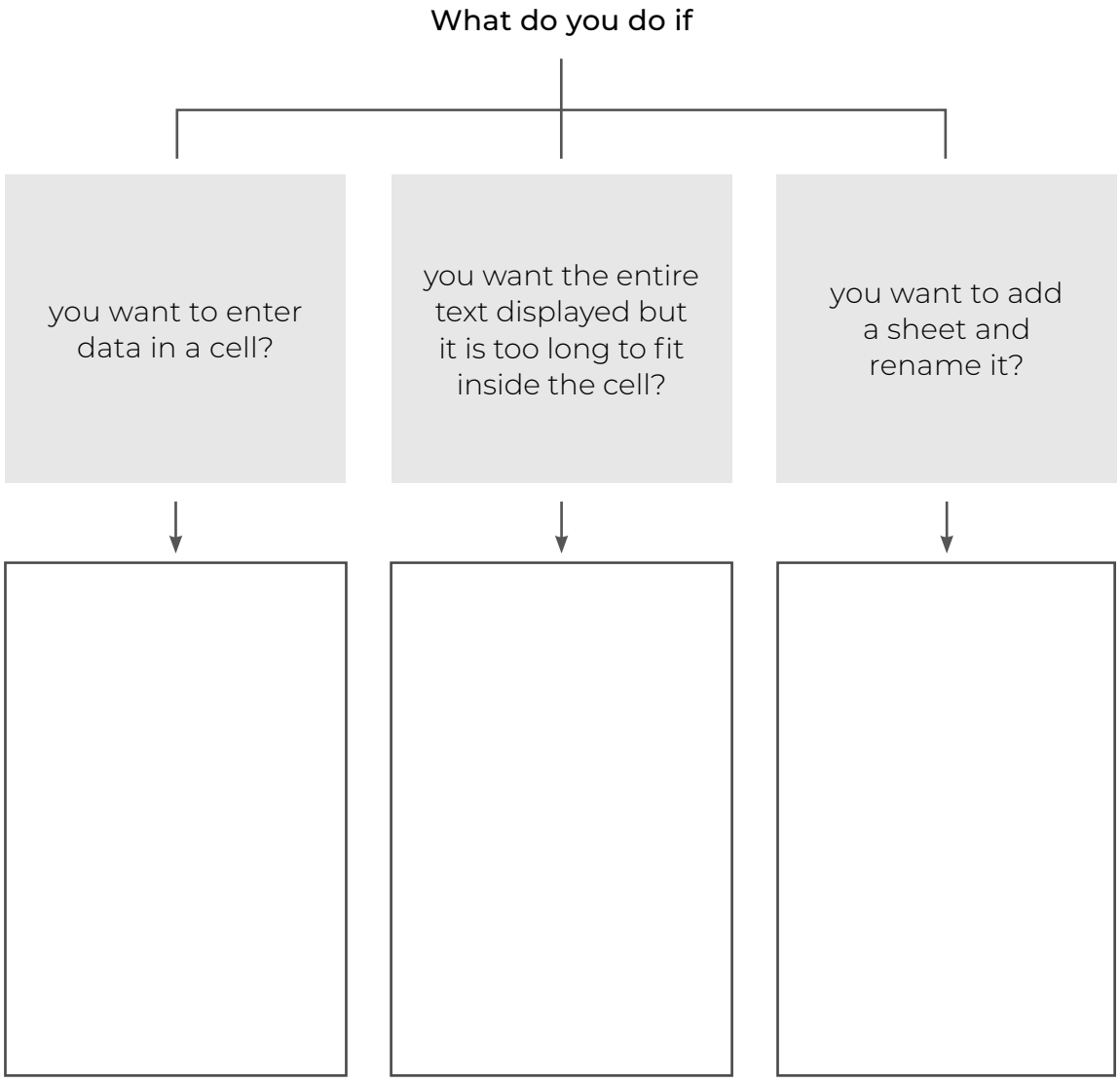
Adding a Worksheet

1.
2.

LESSON 1

TREADING THE ROAD TO MASTERY

Directions: Give the steps on the following task. Write your answer on a separate sheet of paper.



Spreadsheet programs such as Microsoft Excel have features that will help you use the program efficiently. But their true power is to handle simple and complex mathematical calculations. The next lesson will focus on the use of formulas in spreadsheets.

LESSON 2

SETTING THE PATH

USING FORMULAS AND FORMATTING CELLS

After this lesson, learners should be able to

- employ good practices in using arithmetic formulas and functions in spreadsheets;
- create formulas using cell references and arithmetic operators;
- identify errors in formulas;
- use relative and absolute cell referencing in formulas;
- employ spreadsheet functions; and
- use logical functions.

LESSON 2

TRYING THIS OUT

Directions: Supply the missing mathematical and logical operators. Write your answers on a separate sheet of paper.

1. 5 ____ 5 = 10
2. 7 ____ 3 = 4
3. 10 ____ 2 = 5
4. 9 ____ 3 = 27
5. 5 ____ 5 = 25
6. 4 ____ 4 = True
7. 5 ____ 2 = True
8. 7 ____ 3 = False
9. 1 ____ 8 = False
10. 6 ____ 1 = True

Did you find it hard to identify the missing operators? Did you know that we can also solve mathematical and logical problems using a computer? Spreadsheet applications can calculate numbers and solve different problems in preparing a workbook.

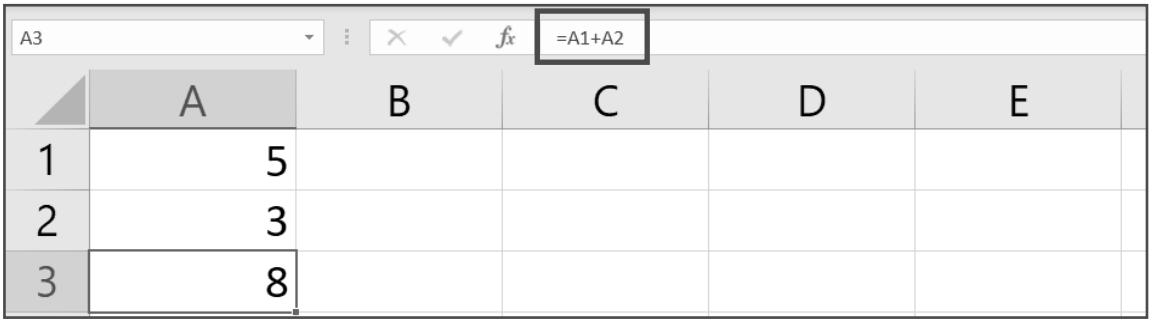
LESSON 2

UNDERSTANDING WHAT YOU DID

Formulas in a spreadsheet are expressions that operate or calculate the values in a range of cells, while **functions** are predefined formulas that are already available in spreadsheet applications.

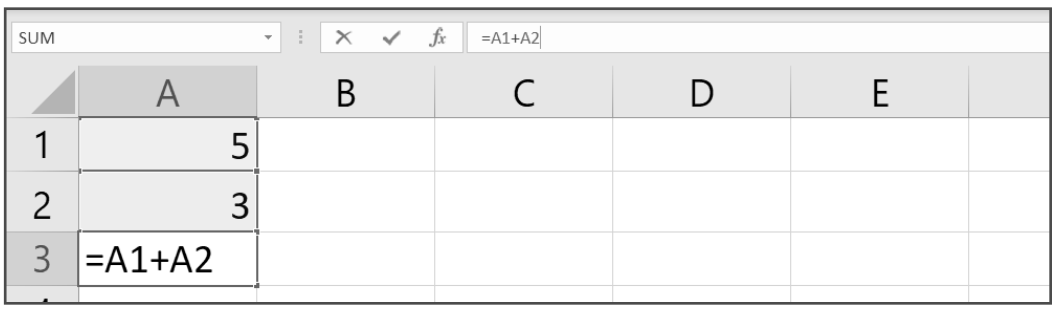
The most practical way of entering formulas and functions in Excel is to type the equal sign (=) first, followed by the constants and operators.

For example, if you want to get the sum of two numbers entered in A1+A2, you will put your formula in A3 as **=A1+A2**.



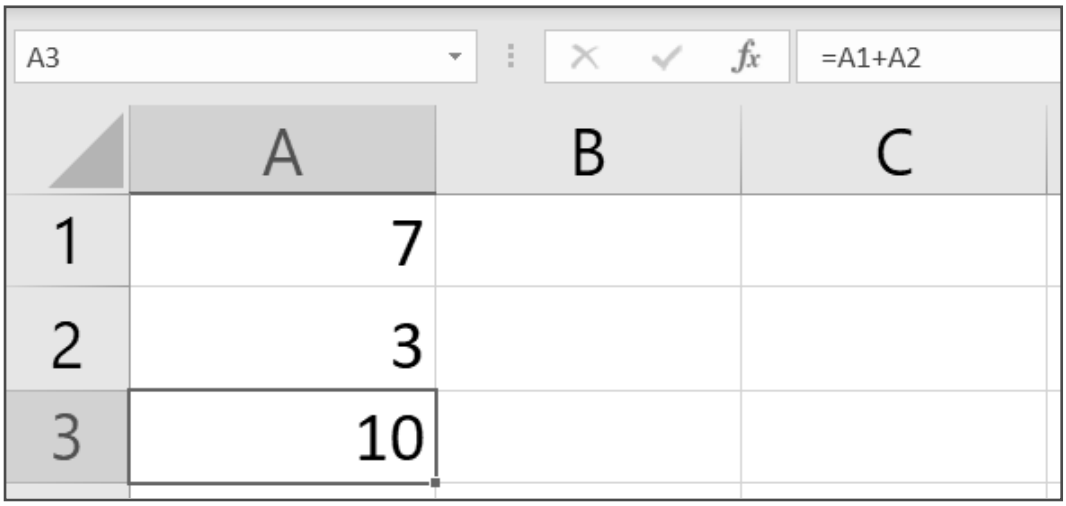
ENTERING A FORMULA

1. To enter a formula, select a cell then type an equal sign (=), followed by the cell address of the numbers to be calculated. For example, A3 is the cell where the formula will be inserted to calculate the input numbers in cells A1 and A2.



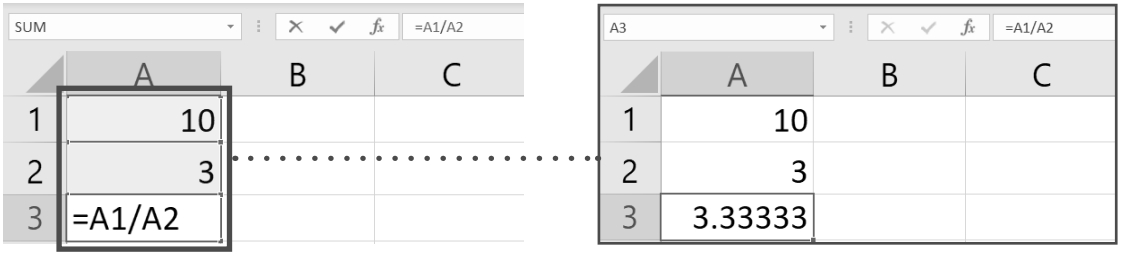
2. Instead of typing the cell labels, simply the first select cell, type the operator, and then select the second cell.

   If you change the value in the input cells, the output cell will change as well because it has a formula.



3. To edit the formula, click the cell on the formula bar and press **Enter**. Alternatively, you can double-click on the cell to change the formula.

> *You can change the arithmetic operators, such as the division sign (/) and the multiplication sign (*).*



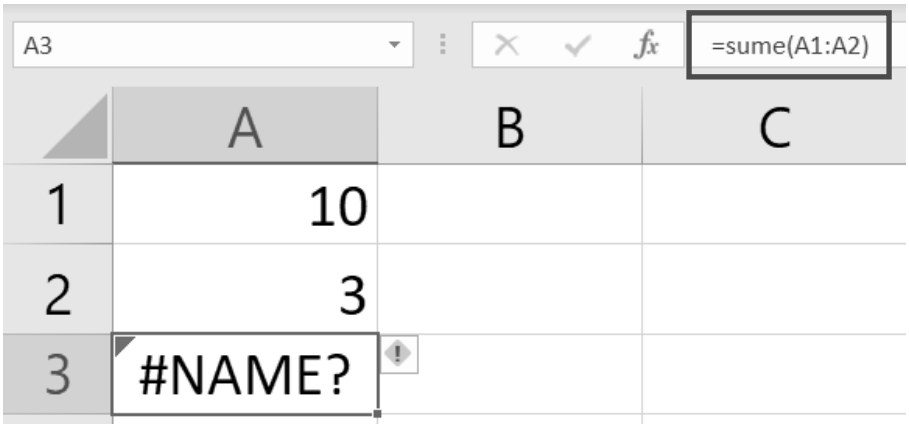
IDENTIFYING ERROR VALUES IN FORMULAS

If the intended result is not met after entering a formula, it may sometimes lead to error values. This includes errors such as **#NAME?**, **#DIV/0!**, and **#REF!**.

ERROR VALUES

#NAME? displays when Excel does not recognize the text in a formula. These texts are built-in functions in Excel.

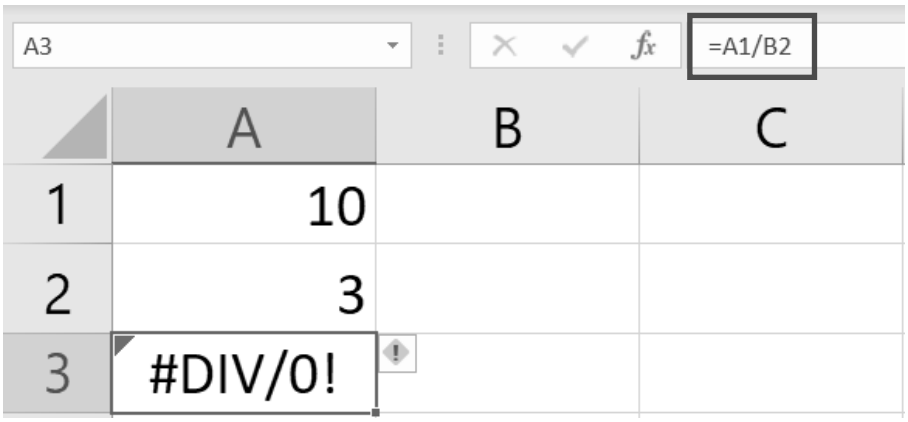
In the example, instead of the word *sum*, *sume* was entered. To remove the error, simply correct the spelling of the word.



#DIV/0! displays when a number is divided either by zero or by a cell that contains no value.

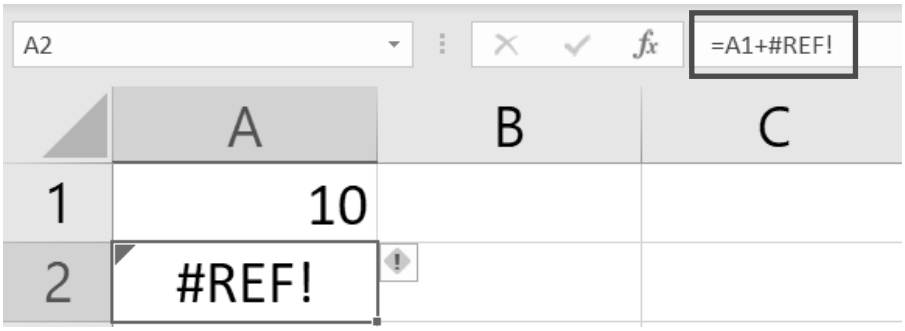
In the example shown on the next page, instead of A2, the cell reference that was entered in the formula was B2, which has no value entered. To remove the error, do not divide the other number by zero or correct the cell reference in the formula.

ERROR VALUES



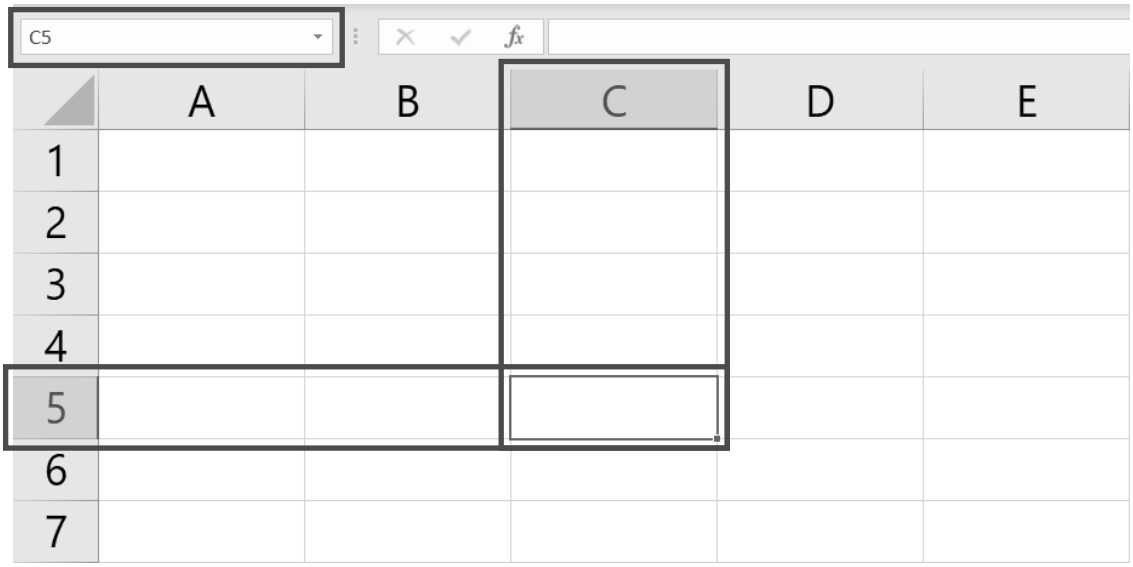
#REF! displays when a cell reference is not valid.

For example, you may have deleted the row of cell A2. To remove the error, press **Undo** or **Ctrl+Z** to undo the deletion.

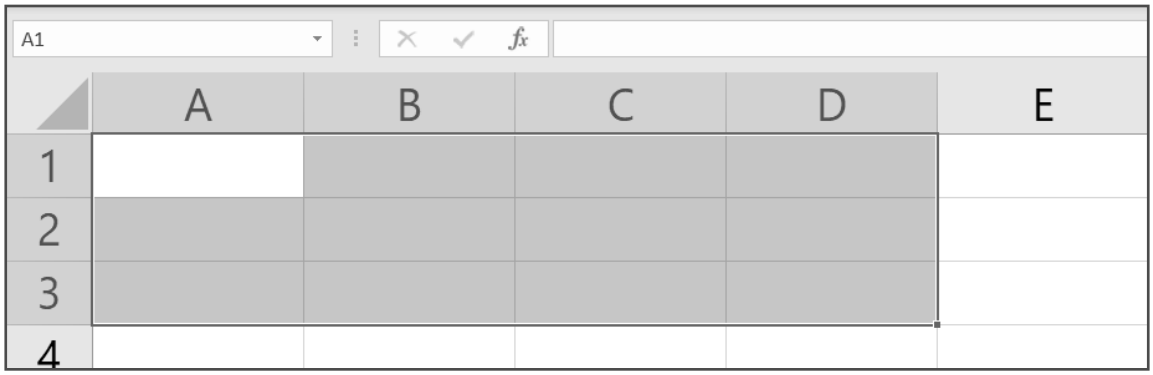


USING RELATIVE AND ABSOLUTE CELL REFERENCING

Cell reference or **cell address** is a combination of a column letter and a row number that identifies a cell on a worksheet. You can see your cell reference at the cell address bar. Cell references help Excel find the values the formula should calculate.



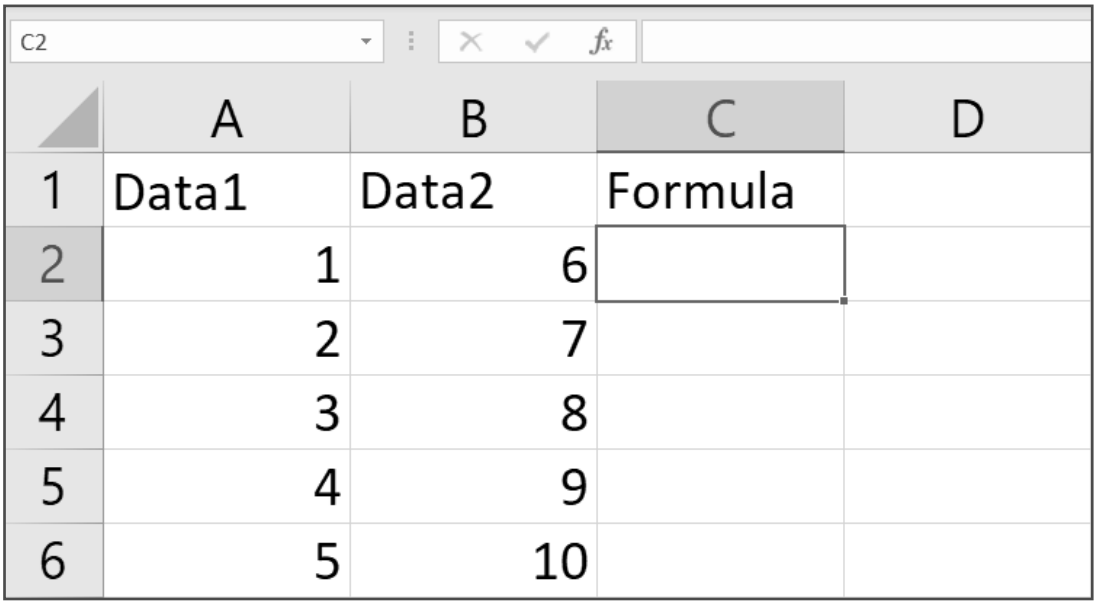
In Excel, a **range** is a block of two or more cells. A **range reference** is represented by the address of the upper left cell and the lower right cell separated with a colon. For example, the range A1:D3 contains 12 cells from A1 to D3.



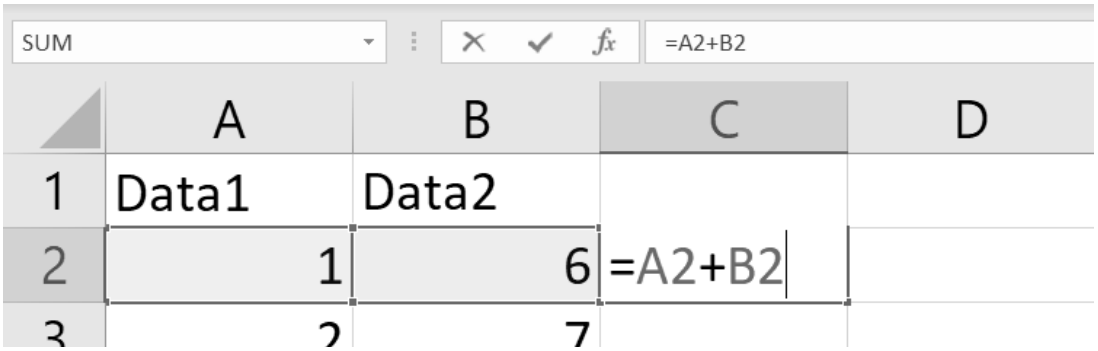
There are different types of cell references for creating a formula. These are the relative and absolute references. They function differently, so it is important to use the appropriate address type.

A **relative reference** is the default cell references in copying a formula. When you use relative, as you copy the formula, the cell reference will change according to the position of the cell.

1. To use a relative reference, enter all the data first.



2. Type the formula in the output cell. Here, the formula is typed on C2 to get the sum of the two numbers.



3. To automatically insert a formula for a range, say C3:C6, use relative referencing. Use the fill handle tool on the lower right corner of the cell, drag it down until you reach the last cell, and then release the left button.

	A	B	C	D	E
1	Data1	Data2	Formula		
2	1	6	7		
3	2	7			
4	3	8			
5	4	9			
6	5	10			

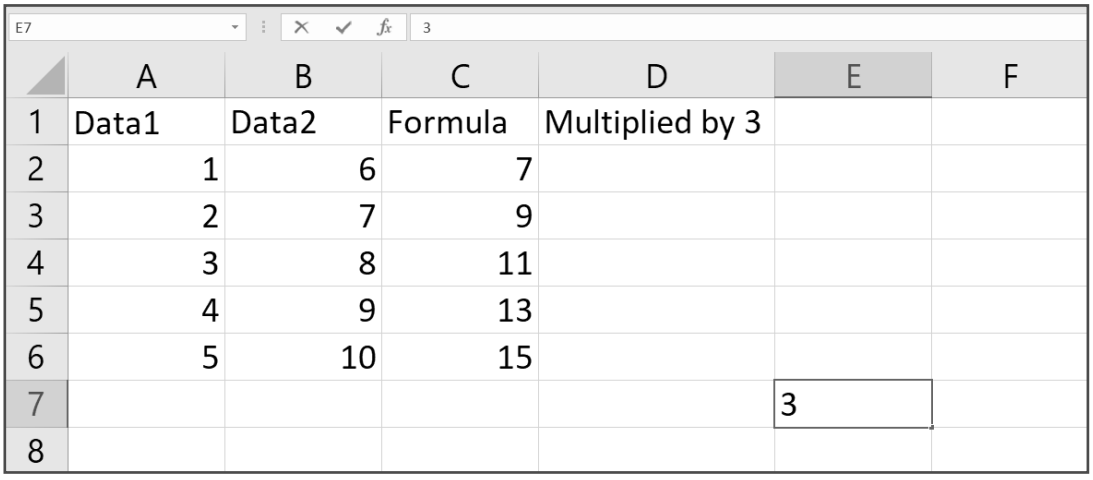
In the example, notice that even if the formula in C2 was copied to the cell range C3:C6, there are different answers. This is because in relative reference, the position of the cell will change automatically.

SUM =A3+B3

	A	B	C	D
1	Data1	Data2	Formula	
2	1	6	7	
3	2	7	=A3+B3	
4	3	8	11	
5	4	9	13	
6	5	10	15	

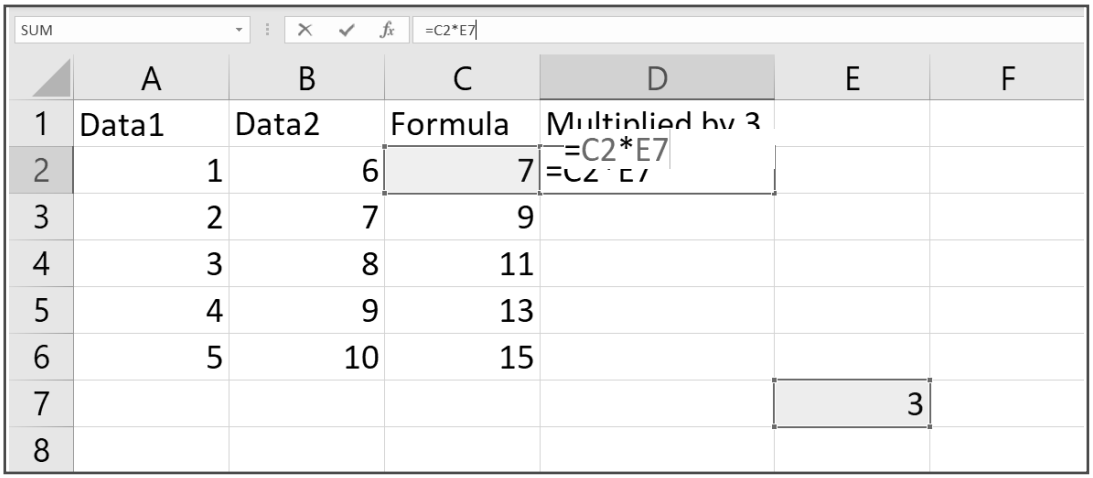
On the other hand, an **absolute reference** will not change as you copy the formula. Absolute reference is especially useful when you want to perform multiple calculations with a value in a specific cell or when you need to copy a formula to other cells without changing references.

1. Let us create an additional calculation to the previous example. Let us multiply all the answers in C2:C6 by a single number placed in E7.



	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7			
3	2	7	9			
4	3	8	11			
5	4	9	13			
6	5	10	15			
7					3	
8						

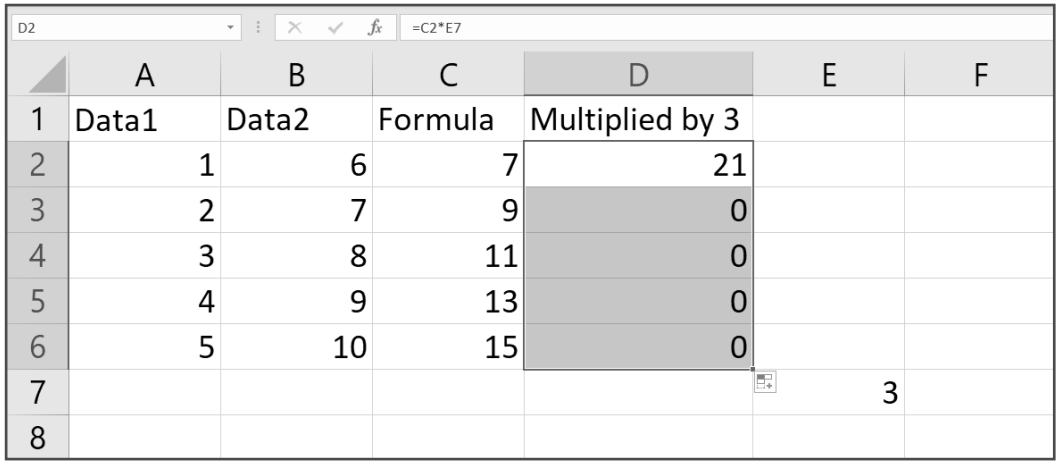
2. Enter a new formula in D2, **=C2*E7.**



	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7	=C2*E7		
3	2	7	9			
4	3	8	11			
5	4	9	13			
6	5	10	15			
7					3	
8						

3. To copy the formula, use the fill handle and drag down until D6.

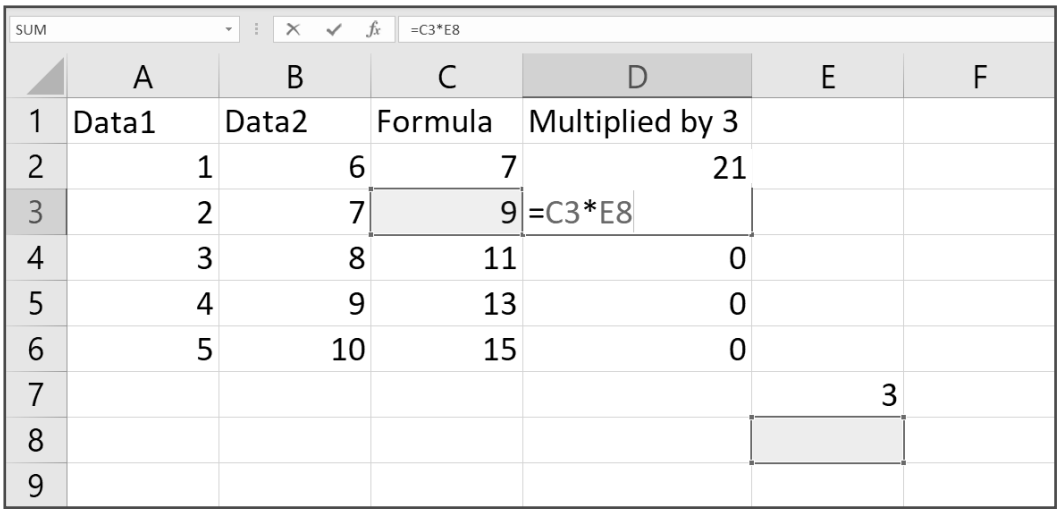
After using the fill handle tool, you will notice a zero (0) result. It is because a relative reference was used.



D2 =C2*E7

	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7	21		
3	2	7	9	0		
4	3	8	11	0		
5	4	9	13	0		
6	5	10	15	0		
7					3	
8						

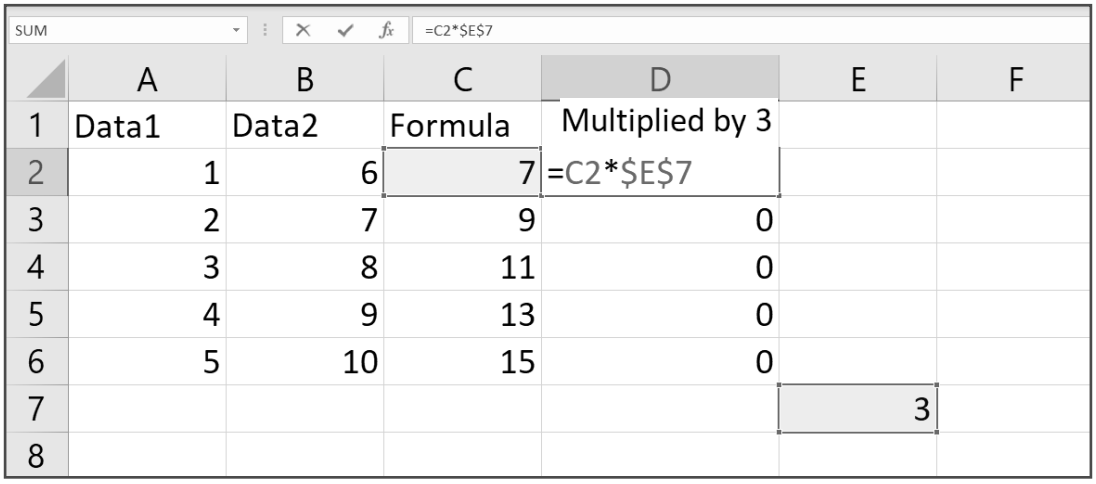
4. Let us check the result. Click each cell reference and you will notice that it follows the next cell reference after E7, which is E8, then E9, and so on.



SUM =C3*E8

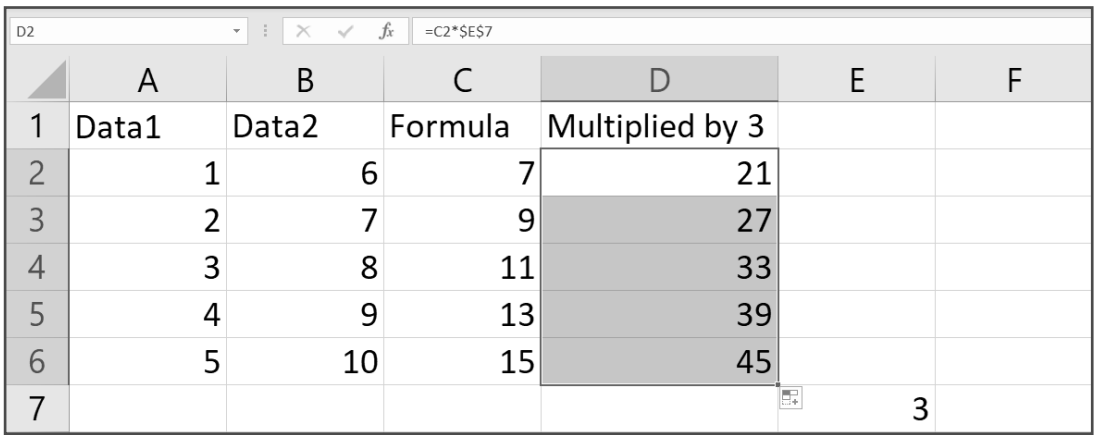
	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7	21		
3	2	7	9	=C3*E8		
4	3	8	11	0		
5	4	9	13	0		
6	5	10	15	0		
7					3	
8						
9						

5. To make the formula absolute, you need to put a dollar sign ($) in the cell reference E7 in the formula. To execute the dollar sign, press **Shift+4**.



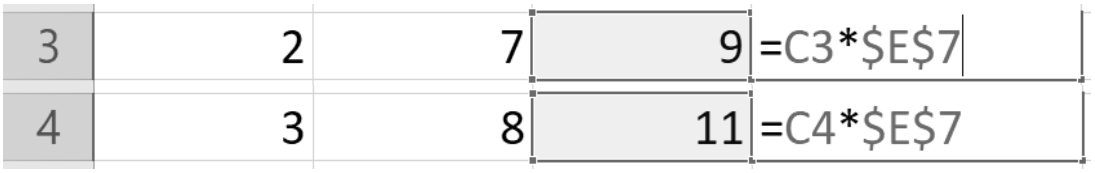
	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7	=C2*E7		
3	2	7	9	0		
4	3	8	11	0		
5	4	9	13	0		
6	5	10	15	0		
7					3	
8						

6. After putting a dollar sign, easily apply the formula to the other cells by dragging the fill handle until D6. Notice that the only thing that changed is the position of the first cell reference in the formula, which is C2 to C6.



	A	B	C	D	E	F
1	Data1	Data2	Formula	Multiplied by 3		
2	1	6	7	21		
3	2	7	9	27		
4	3	8	11	33		
5	4	9	13	39		
6	5	10	15	45		
7					3	

Let us check the formula of the other cell references. It is absolute because the E7 cell reference did not change for the rest of the formulas when a dollar sign was placed.



3	2	7	9	=C3*E7
4	3	8	11	=C4*E7

USING FUNCTIONS

Microsoft Excel offers many built-in functions that allow you to perform a variety of mathematical operations on the selected cells.

FUNCTIONS

SUM is used to compute the total of all items in the specified range.

AVERAGE is used to get the average of the items in a range.

COUNT is used to count the values found in the range.

COUNTA is used to count cells that contain numbers, texts, logical values, error values, and empty texts returned in formulas.

ROUND is used to round a number to a specified number of digits.

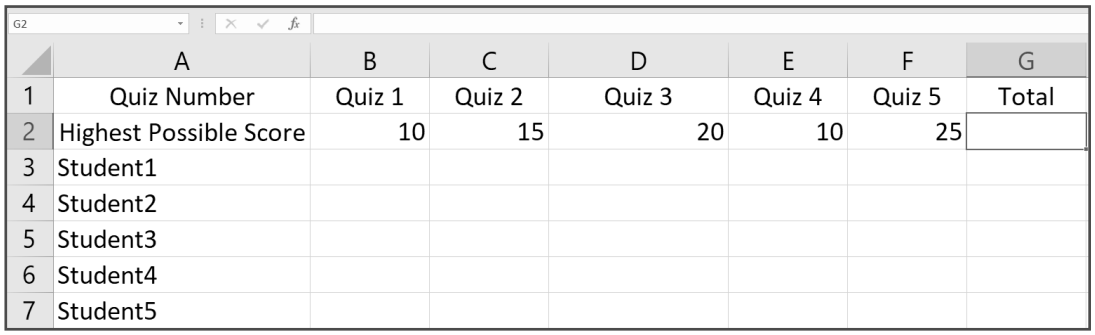
MAX is used to get the largest value within the range.

MIN is used to get the smallest value within the range.

One of the ways to enter a function directly to the formula bar is to type the function name and its arguments, usually a range of cells.

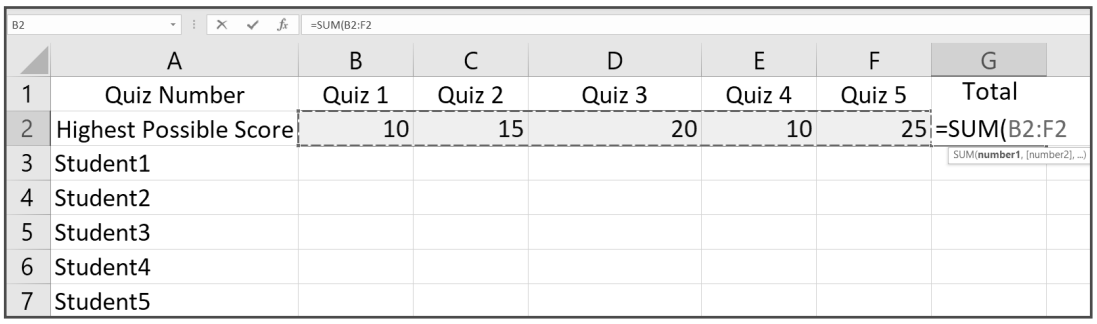
THE SUM FUNCTION

1. Let us prepare sample data to work with.
2. To get the total score, you need to use a sum function. In this example, you need to enter the formula **=SUM(B2:F2)** in G2. To get the range of the cells, simply highlight the range to be inserted in the formula.



	A	B	C	D	E	F	G
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total
2	Highest Possible Score	10	15	20	10	25	
3	Student1						
4	Student2						
5	Student3						
6	Student4						
7	Student5						

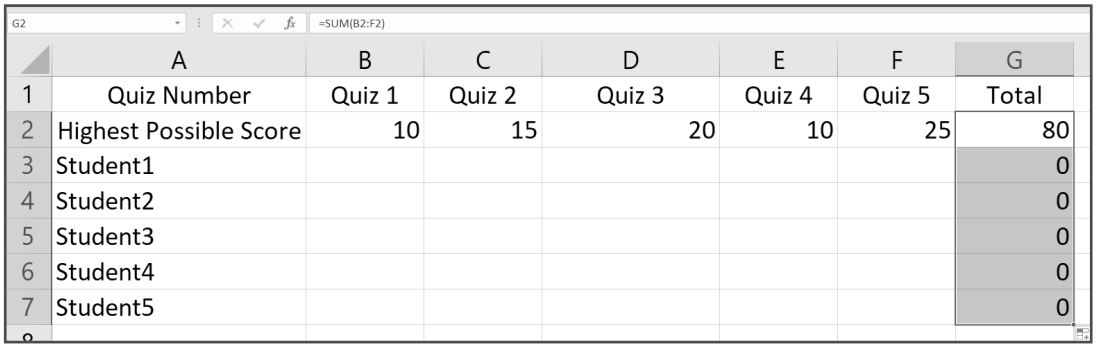
Step 1. Sample Data



	A	B	C	D	E	F	G
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total
2	Highest Possible Score	10	15	20	10	25	=SUM(B2:F2
3	Student1						
4	Student2						
5	Student3						
6	Student4						
7	Student5						

Step 2. Sum Function

3. Use relative referencing to copy the formula to the rest of cells.

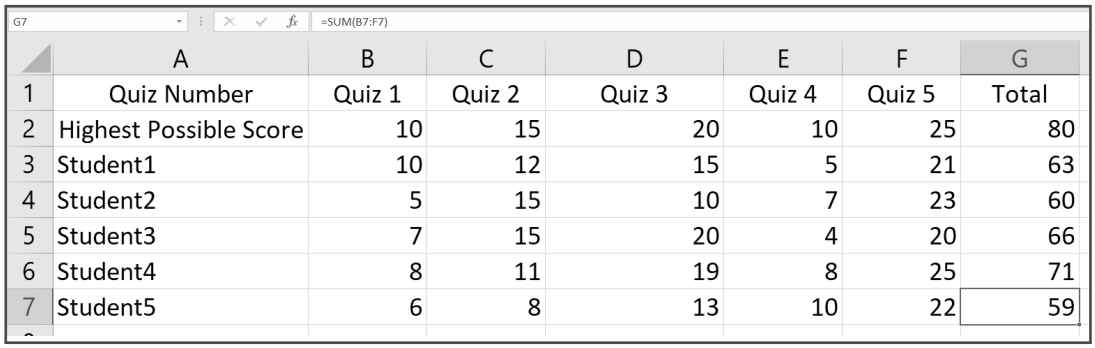


	A	B	C	D	E	F	G
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total
2	Highest Possible Score	10	15	20	10	25	80
3	Student1						0
4	Student2						0
5	Student3						0
6	Student4						0
7	Student5						0

The result is *0* because there is no data in the cells yet.

> *To use other functions, simply type the name of the function you want to use.*

Let us enter scores for each student.

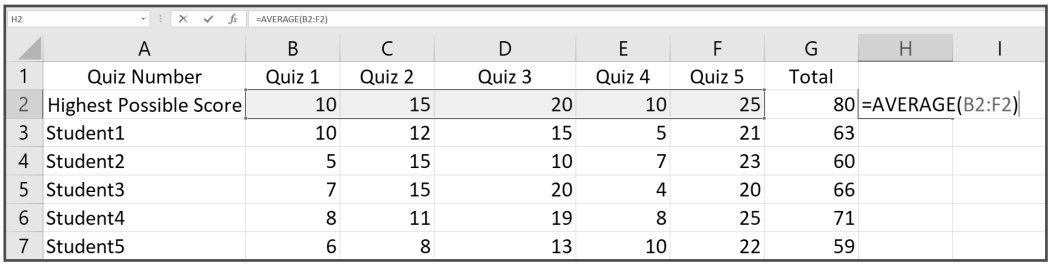


	A	B	C	D	E	F	G
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total
2	Highest Possible Score	10	15	20	10	25	80
3	Student1	10	12	15	5	21	63
4	Student2	5	15	10	7	23	60
5	Student3	7	15	20	4	20	66
6	Student4	8	11	19	8	25	71
7	Student5	6	8	13	10	22	59

THE AVERAGE FUNCTION

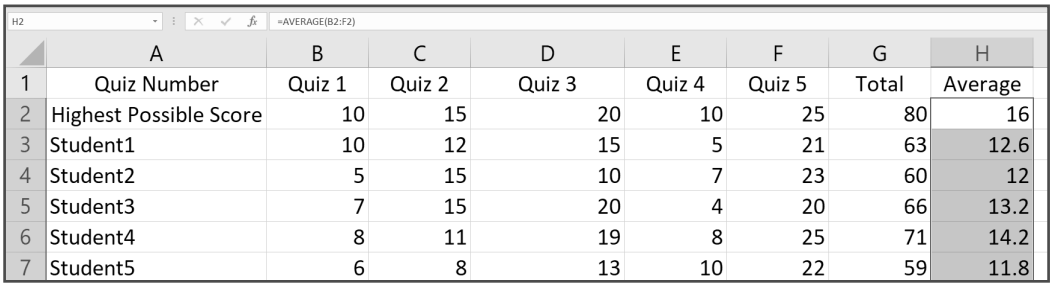
Let us get the average, total number of quizzes, largest score, and smallest score in the quizzes of the previous example.

1. To get the average, enter **=AVERAGE(B2:F2).**



	A	B	C	D	E	F	G	H	I
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total		
2	Highest Possible Score	10	15	20	10	25	80	=AVERAGE(B2:F2)	
3	Student1	10	12	15	5	21	63		
4	Student2	5	15	10	7	23	60		
5	Student3	7	15	20	4	20	66		
6	Student4	8	11	19	8	25	71		
7	Student5	6	8	13	10	22	59		

2. Use the fill handle to copy the function to other cells.



	A	B	C	D	E	F	G	H
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total	Average
2	Highest Possible Score	10	15	20	10	25	80	16
3	Student1	10	12	15	5	21	63	12.6
4	Student2	5	15	10	7	23	60	12
5	Student3	7	15	20	4	20	66	13.2
6	Student4	8	11	19	8	25	71	14.2
7	Student5	6	8	13	10	22	59	11.8

When you type a function name, a drop-down list of functions appears. It means that Excel recognizes the function. You can just double-click the function name you want to use from the list.

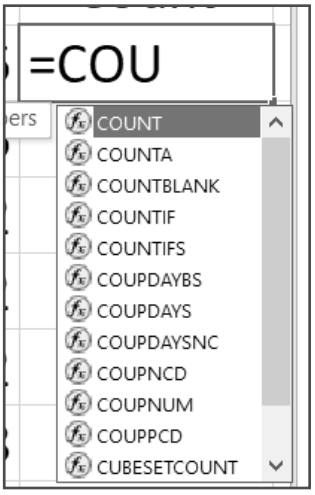
THE COUNT FUNCTION

1. To use the count function, type **=COUNT([range of cells]).**

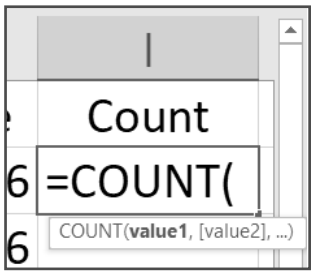
   You can also double-click **COUNT** from the drop-down list. Here, we type **=COUNT(B2:F2)**

2. When you double-click the function, it will automatically be selected, and the next entry should be the range of the cell.

   The result will be *5*, which means there are five quizzes. Use the fill handle to copy the formula to the rest of the cells.



Drop-down list of functions



Automatic entry of COUNT function

=COUNT(B2:F2)

B	C	D	E	F	G	H
Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total	Count
10	15	20	10	25	80	5
10	12	15	5	21	63	

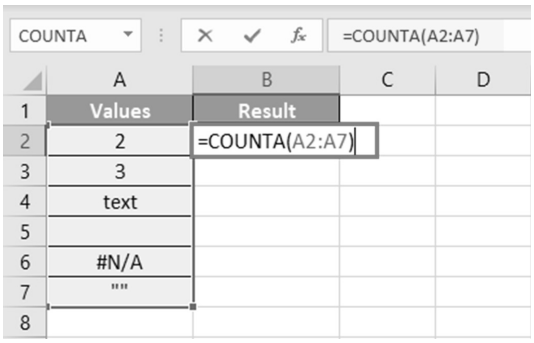
In the example on the next page, some results are not equal to five because the student missed some quizzes.

	A	B	C	D	E	F	G	H
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total	Count
2	Highest Possible Score	10	15	20	10	25	80	5
3	Student1	10		15	5	21	51	4
4	Student2	5	15		7	23	50	4
5	Student3	7	15			20	42	3
6	Student4	8	11	19	8	25	71	5
7	Student5	6	8	13	10	22	59	5
8								

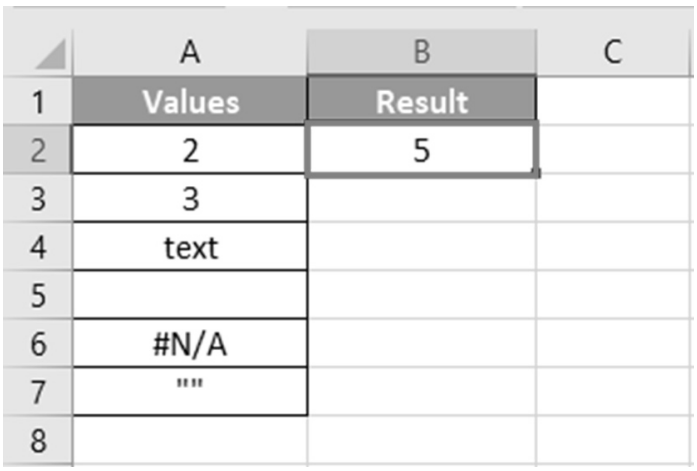
COUNT Function Example

THE COUNTA FUNCTION

1. If you wish to return the number of non-blank cells in one cell range, say A2:A7, use the COUNTA function. In this example, you can see that the formula returns the number of non-blank cells in the range A2:A7.

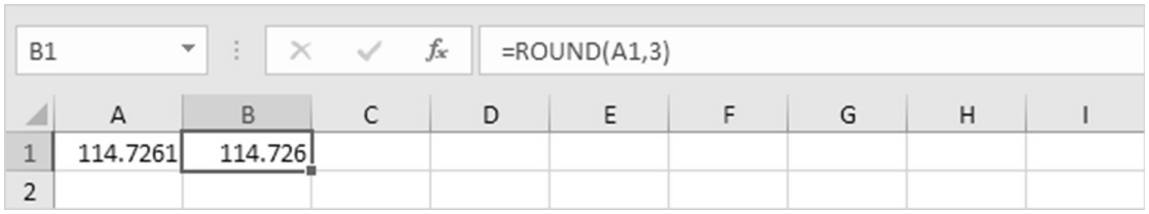


2. **=COUNTA(A2:A7)** counts the number of data-filled cells in A2 through A7 and returns a value of 5 because cell A5 is blank. So all values are counted except the value in cell A5, which is blank.

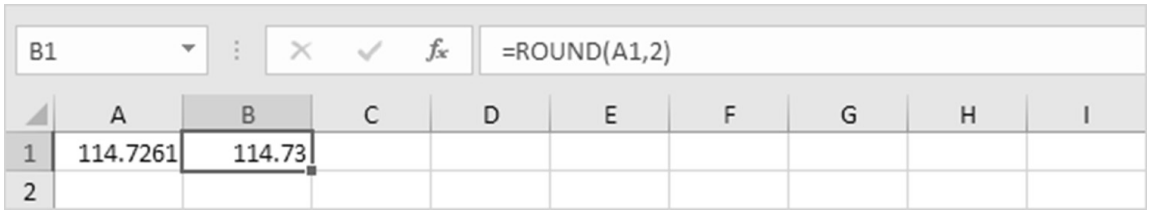


THE ROUND FUNCTION

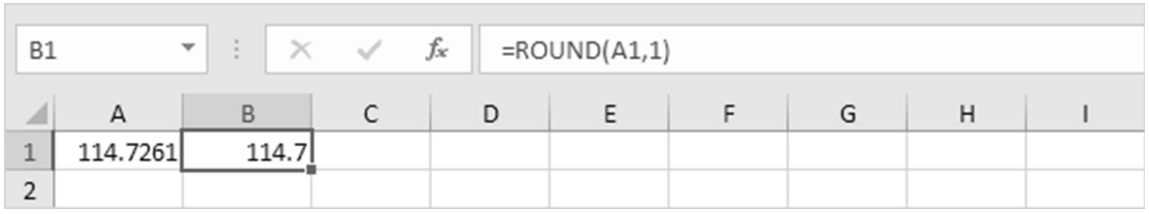
The ROUND function in Excel rounds a number to a specified number of digits. Numbers 1, 2, 3, and 4 get rounded down, while 5, 6, 7, 8, and 9 get rounded up. Here are examples on how to use the ROUND function.



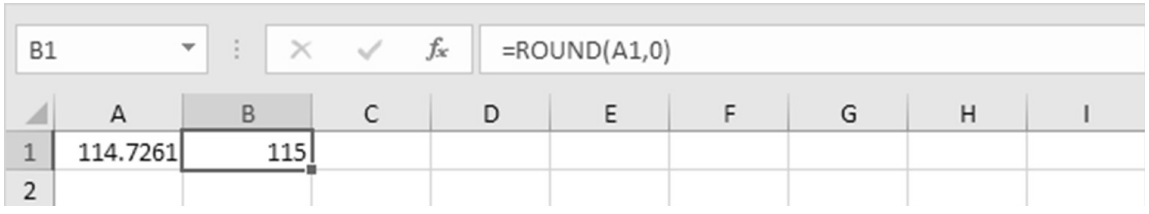
Round a Number to Three Decimal Places



Round a Number to Two Decimal Places



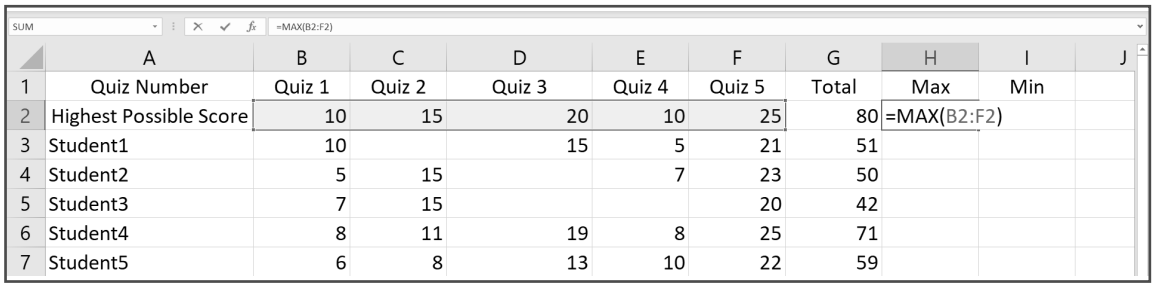
Round a Number to One Decimal Place



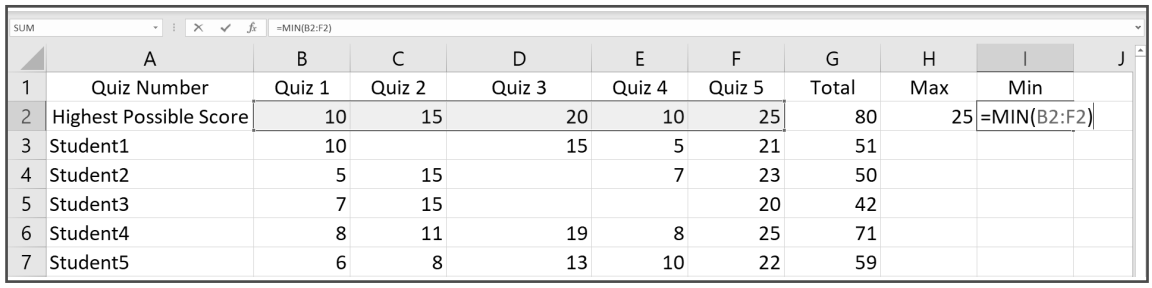
Round a Number to the Nearest Integer

THE MAX AND MIN FUNCTION

To use the max or min function, type in the formula =**MAX([range of cells])** or =**MIN([range of cells])**. In these examples, we type =**MAX(B2:F2)** and =**MIN(B2:F2)**.



	A	B	C	D	E	F	G	H	I	J
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total	Max	Min	
2	Highest Possible Score	10	15	20	10	25	80	=MAX(B2:F2)		
3	Student1	10		15	5	21	51			
4	Student2	5	15		7	23	50			
5	Student3	7	15			20	42			
6	Student4	8	11	19	8	25	71			
7	Student5	6	8	13	10	22	59			



	A	B	C	D	E	F	G	H	I	J
1	Quiz Number	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Total	Max	Min	
2	Highest Possible Score	10	15	20	10	25	80	25	=MIN(B2:F2)	
3	Student1	10		15	5	21	51			
4	Student2	5	15		7	23	50			
5	Student3	7	15			20	42			
6	Student4	8	11	19	8	25	71			
7	Student5	6	8	13	10	22	59			

The maximum number should be *25*, and the minimum number should be *10*. Use the fill handle to copy the formulas to the rest of the cells.

USING THE LOGICAL FUNCTION *IF*

The logical function **If** is useful in decision-making statements to determine if the result is a success or not to the standard being set.

Let us use grades of students as an example.

1. Prepare a sample workbook containing students' grades in the first quarter. The remarks will only display "Passed" or "Failed."

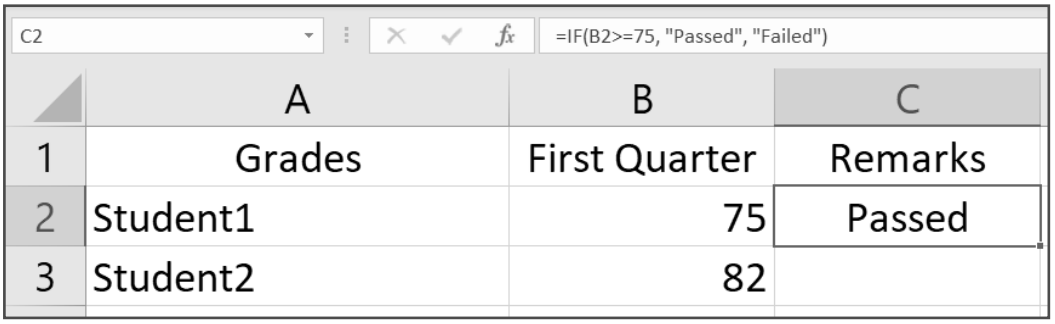
	A	B	C
1	Grades	First Quarter	Remarks
2	Student1	75	
3	Student2	82	
4	Student3	71	
5	Student4	84	
6	Student5	77	

2. Enter the IF function in the output cell. Here, type in **=IF(B2>=75, "Passed", "Failed")** in C2.

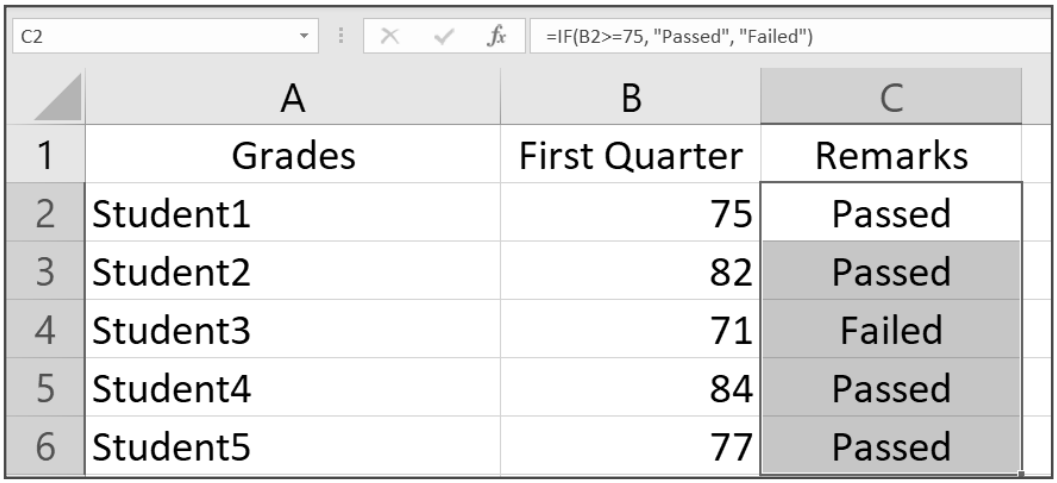
	A	B	C	D	E
1	Grades	First Quarter	Remarks		
2	Student1	75	=IF(B2>=75, "Passed", "Failed")		
3	Student2	82			
4	Student3	71			

If the value in B2 is greater than or equal to 75, it will result in a passed remark. Otherwise, if the value in B2 is 74 and below, it will result in a failed remark.

The remark for C2 will be "Passed" because the statement is true for C2; the grade 75 is equal to the value set.



3. Use the fill handle to copy the formula. C4 is "Failed" because the grade 71 is not greater than or equal to 75.



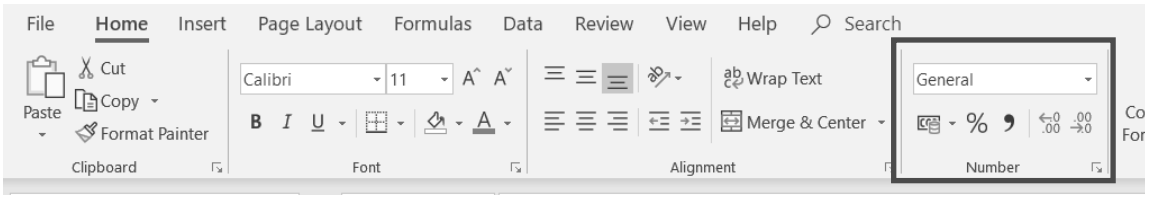
Formulas and functions are the two most essential features of Microsoft Excel and other spreadsheet applications. After all, they were built to organize and calculate numerical data.

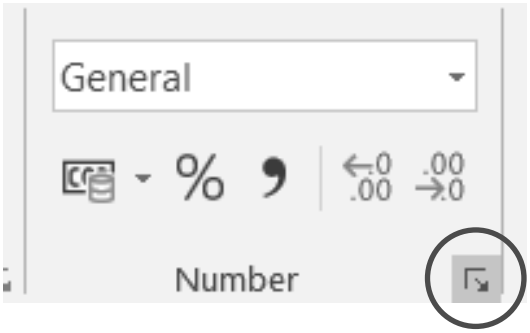
FORMATTING NUMERICAL DATA

Formatting is different in a spreadsheet when it comes to numerical data entered in a cell. When you enter data with numbers, Excel will recognize what type of numerical data you are referring to, but you can always change it with your desired format.

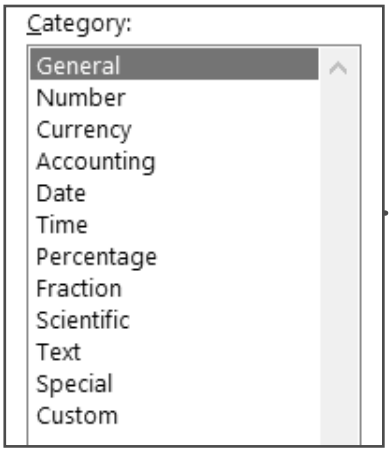
DECIMAL PLACES AND SEPARATOR

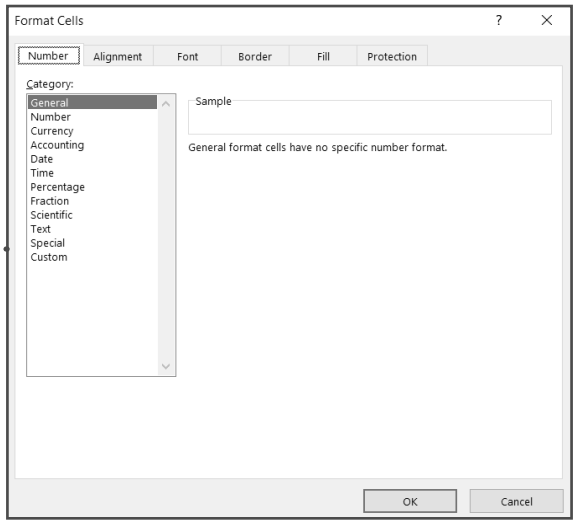
To edit the number format of cells, look for the Number group in the Home tab.



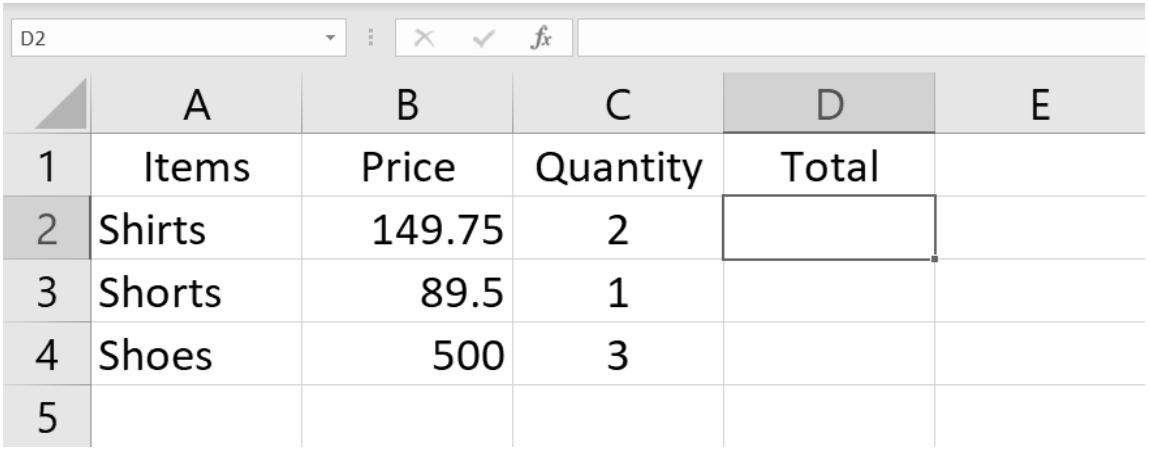


You can find the full set of number formatting options if you click the Dialog Box Launcher in the corner of the Number group.



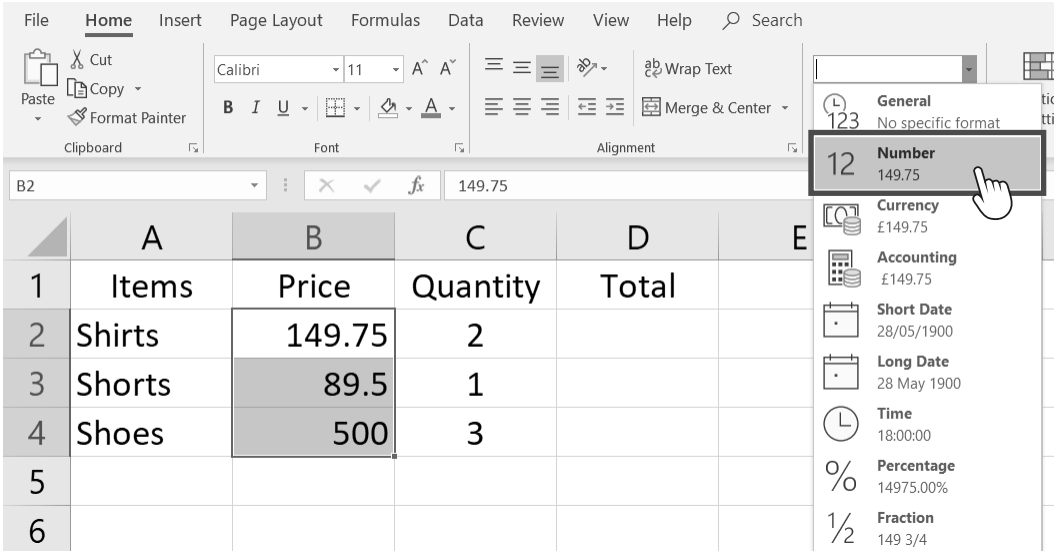


Let us try to format numbers with decimal places. Excel will display the decimal places you entered in the number.



Some have two decimal places and some only have one because Excel displays the zeroes that end a decimal. But for the purpose of uniformity and organization, you can choose to format decimal places.

1. To format decimal places, click the cell or cell ranges, then click the Number Format drop-down list, and then choose **Number.**



Here, the decimal places of the prices in cell range B2:B4 will be displayed with two decimals.

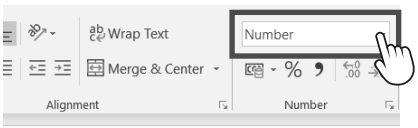
	A	B	C	D
1	Items	Price	Quantity	Total
2	Shirts	149.75	2	
3	Shorts	89.50	1	
4	Shoes	500.00	3	

2. Next, let us calculate first. Here, we compute for the total price of each item by multiplying the price by the quantity.

	A	B	C	D
1	Items	Price	Quantity	Total
2	Shirts	149.75	2	=B2*C2
3	Shorts	89.50	1	
4	Shoes	500.00	3	

Use the fill handle to copy the formula to D3 and D4.

	A	B	C	D
1	Items	Price	Quantity	Total
2	Shirts	149.75	2	299.5
3	Shorts	89.50	1	89.5
4	Shoes	500.00	3	1500

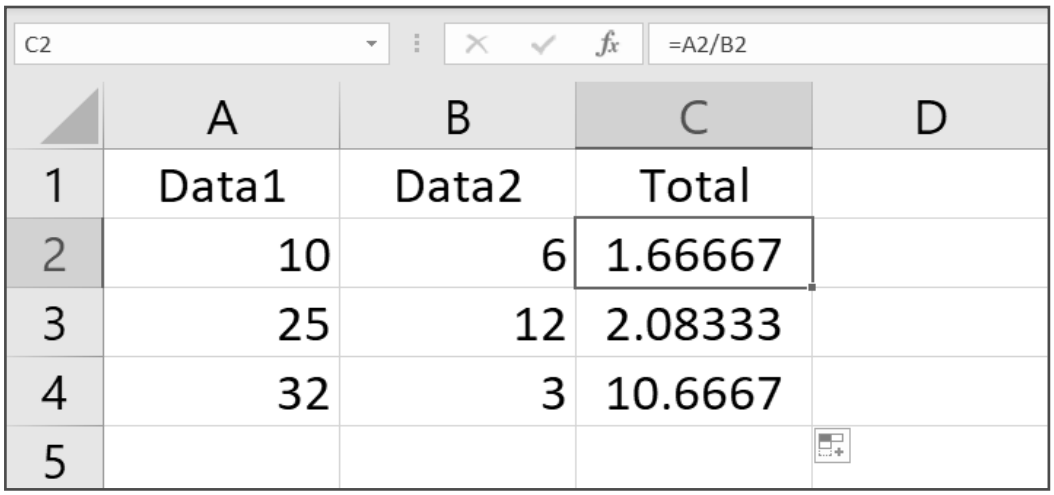


D	E	F
Total		
299.50		
89.50		
1500.00		

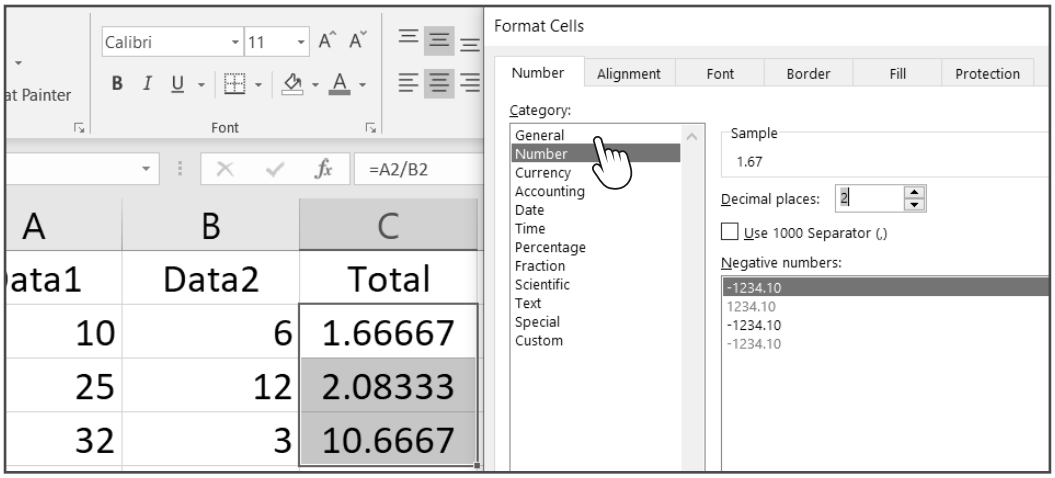
3. To change the format to two decimal places, change the number format to **Number** in the Number group.

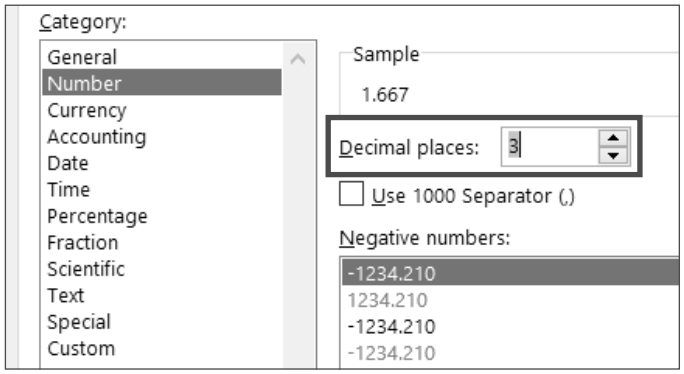
However, this quick access is not applicable if you want a decimal place that is more than two.

To format it, click **More Number Formats...** or the dialog box launcher. For example, when you use the mathematical operator divide (/) in a formula, it is expected to have results with decimal places.



Let us change the decimal places to three. Select the range of cells, say C2:C4, then click **More Number Formats.** A Format Cells dialog box will appear. Then, choose **Number.**

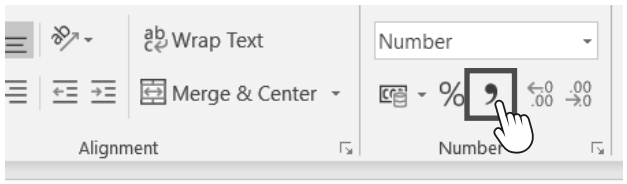




The default decimal place is *2*. Change it to *3* by entering *3* or clicking the arrow up. Click **OK.**

The values will now display three decimal places rounded to the nearest thousandths.

	A	B	C	D
1	Data1	Data2	Total	
2	10	6	1.667	
3	25	12	2.083	
4	32	3	10.667	

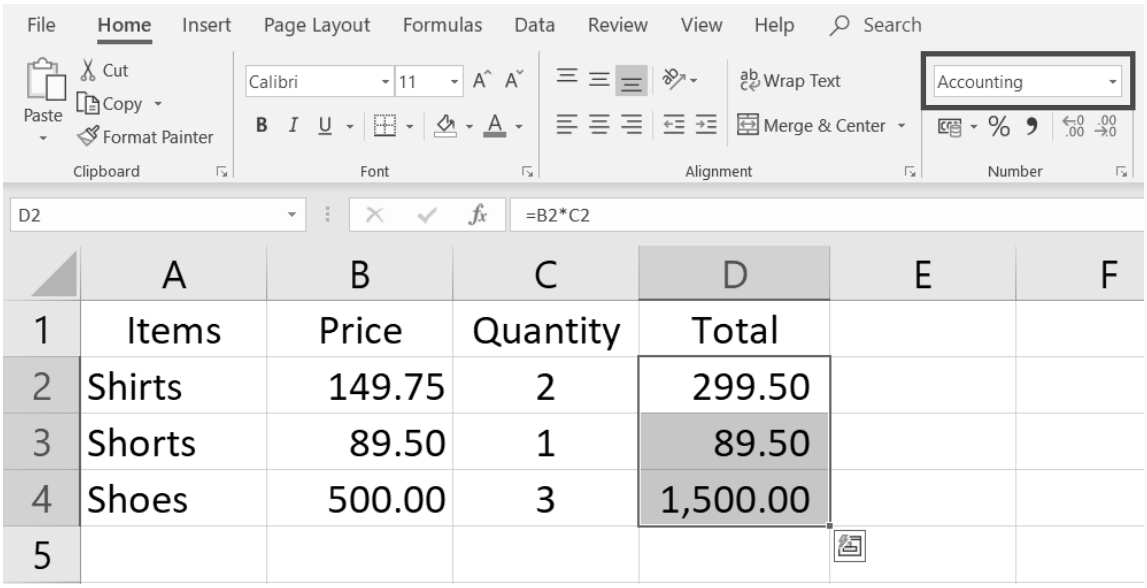


D	E	F
Total		
299.50		
89.50		
1500.00		

Let us go back to the first example. Total prices in thousands do not have a separator because they were entered as numbers with a General format.

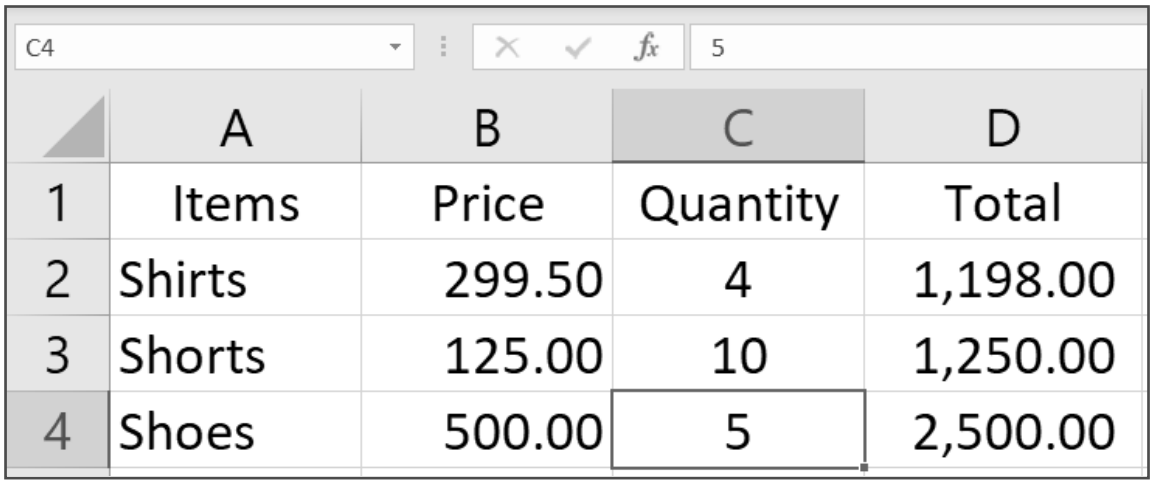
To add a comma or a thousands separator, select the cell range to be formatted then click **Comma Style** in the Number group.

Then, the number format will become **Accounting,** and a thousands separator will be displayed in D4.



	A	B	C	D	E	F
1	Items	Price	Quantity	Total		
2	Shirts	149.75	2	299.50		
3	Shorts	89.50	1	89.50		
4	Shoes	500.00	3	1,500.00		
5						

Let us change the quantities and prices to see other results.



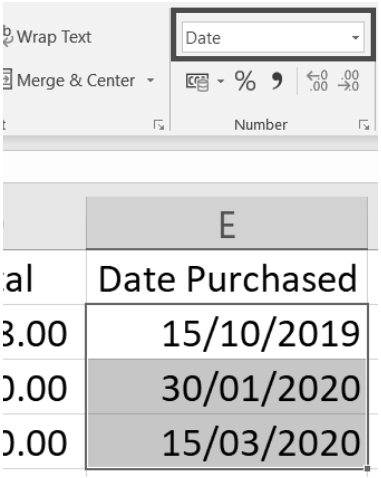
	A	B	C	D
1	Items	Price	Quantity	Total
2	Shirts	299.50	4	1,198.00
3	Shorts	125.00	10	1,250.00
4	Shoes	500.00	5	2,500.00

ADDING DATE TYPE, CURRENCY SYMBOL, AND PERCENTAGE

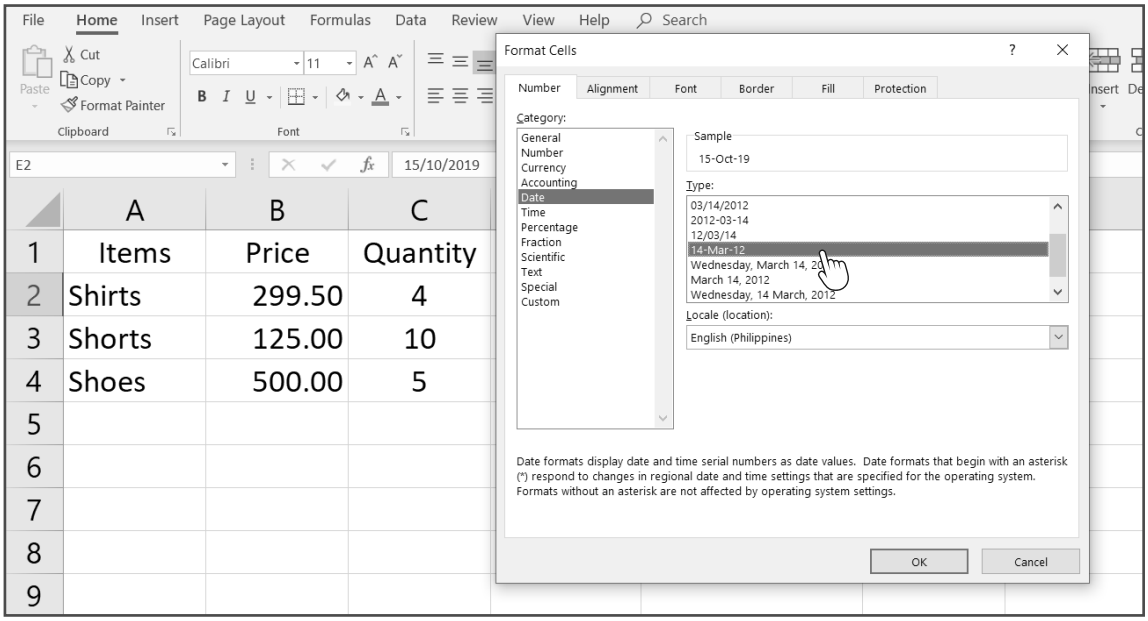
There are other numerical data that need special formatting. For example, you can choose among the available date formats, depend on the currency of a specific country when entering money, and display numbers as percentage.

DATE TYPE

From the example in our previous topic, let us put a date when the items were purchased or bought. The default format for dates is dd/mm/yyyy.



To change, select E2 then click More Number Formats dialog box launcher. Select the type that you prefer. For this example, let us select the format date/short month/year; just scroll down the selection.



The date will be changed to the type assigned. You can do this to other dates in the cells. Do not use the fill handle, as it will create a series of dates following the first date entered.

E2 | 15/10/2019

	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	299.50	4	1,198.00	15-Oct-19
3	Shorts	125.00	10	1,250.00	30/01/2020
4	Shoes	500.00	5	2,500.00	15/03/2020

E4 | 15/03/2020

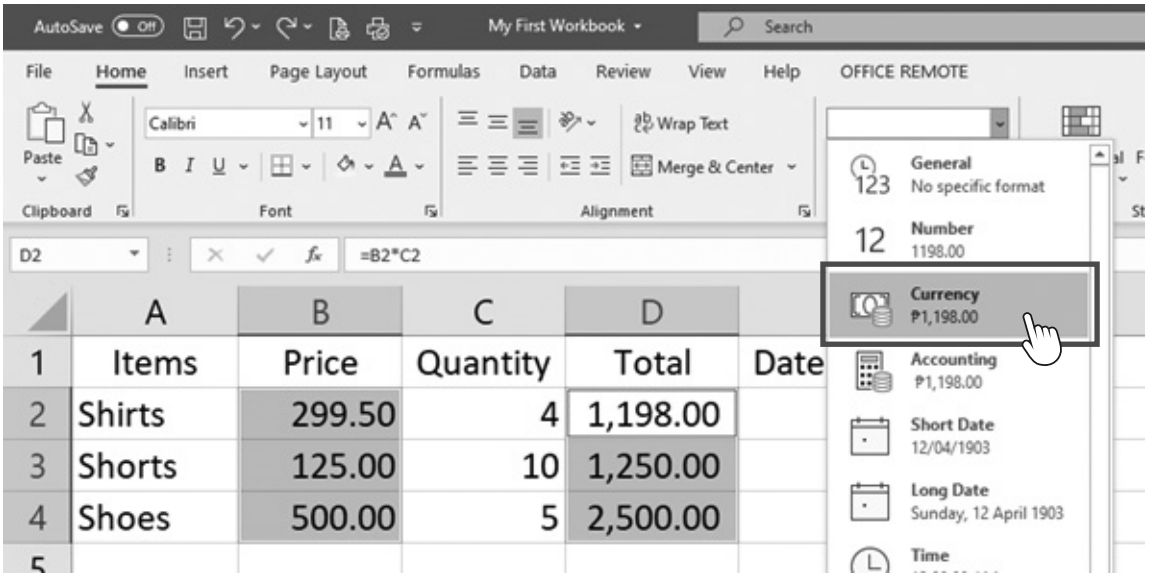
	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	299.50	4	1,198.00	15-Oct-19
3	Shorts	125.00	10	1,250.00	30-Jan-20
4	Shoes	500.00	5	2,500.00	15-Mar-20

CURRENCY SYMBOL

Let us put a currency symbol on the price and total prices. Select the cell range to be formatted. In this example, we will select B2:B4 and D2:D4. To select nonadjacent cells and format cells easily and quickly, press the Ctrl key while selecting the cell ranges.

	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	299.50	4	1,198.00	15-Oct-19
3	Shorts	125.00	10	1,250.00	30-Jan-20
4	Shoes	500.00	5	2,500.00	15-Mar-20

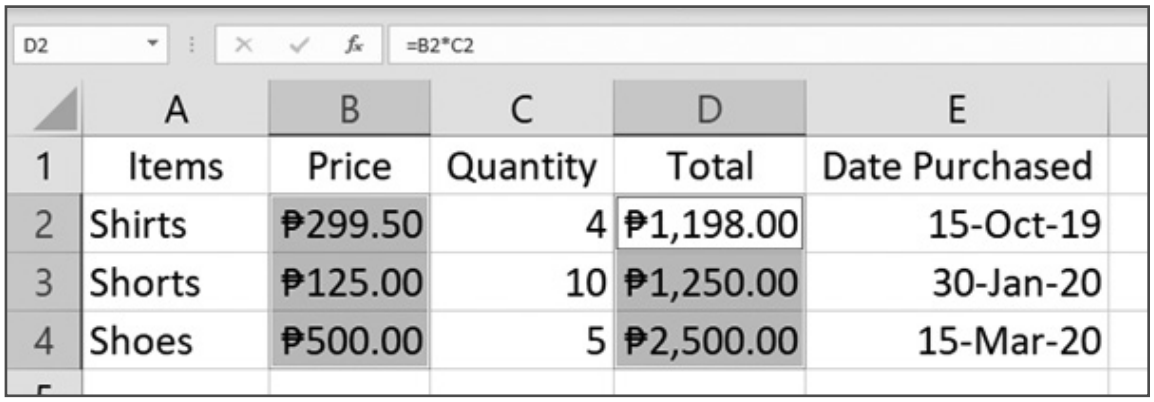
Click the Currency format in the Number group. You can see a Peso sign if you are using Microsoft Excel in countries with a Peso currency such as the Philippines.



The format will be applied to the selected cell ranges.

If the data is displayed as a series of number signs or hashtags (#)—also known as hash or pound sign—it means that the data is longer than the default width of the column. Adjust the column width by double-clicking on the right side of the header.

	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	₱299.50	4	########	15-Oct-19
3	Shorts	₱125.00	10	########	30-Jan-20
4	Shoes	₱500.00	5	########	15-Mar-20



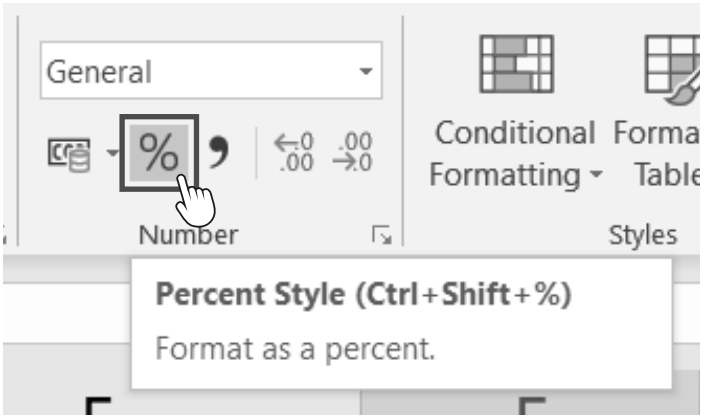
	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20

PERCENTAGE

How about discounting the price of the items? Let us put a percentage in each price. There are two ways to do it. First, enter the numbers.

	A	B	C	D	E	F
1	Items	Price	Quantity	Total	Date Purchased	Discount
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	10
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	50

For the first method, click **Percent Style** in the Number group.



But the percentage displayed two additional decimal places. To solve this problem, simply reenter the original numbers 5, 10, and 50.

	A	B	C	D	E	F
1	Items	Price	Quantity	Total	Date Purchased	Discount
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	500%
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	1000%
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	5000%

	A	B	C	D	E	F
1	Items	Price	Quantity	Total	Date Purchased	Discount
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5%
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	10%
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	50%

The second method is to enter the numbers followed by a percent sign (%) to avoid reentering the numbers.

	A	B	C	D	E	F
1	Items	Price	Quantity	Total	Date Purchased	Discount
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5%
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	

To complete our example, let us compute for the less price, discounted price, and the total amount due. Create a formula on G2:G4 for the less price by multiplying the original price to the percentage discount.

SUM =B2*F2

	A	B	C	D	E	F	G
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5%	=B2*F2
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	10%	
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	50%	

Next, for the discounted price, create a formula in H2:H4 by subtracting the original price to the less price. Freeze columns A and B for a while.

SUM =B2-G2

	A	B	C	D	E	F	G	H
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	=B2-G2
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	10%		
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	50%		

H4 =B4-G4

	A	B	C	D	E	F	G	H
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20	10%	₱12.50	₱112.50
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20	50%	₱250.00	₱250.00

For the total amount, multiply the discounted price to the quantity. First, freeze columns A, B, and C.

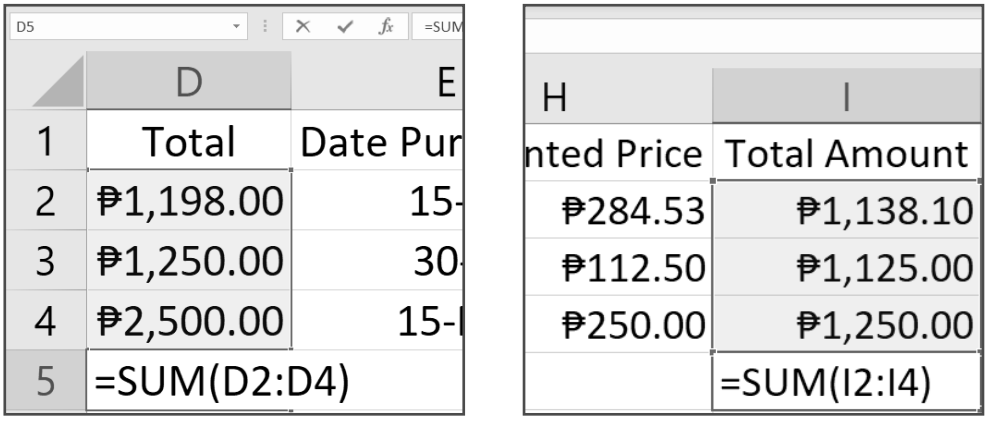
SUM =H2*C2

	A	B	C	H	I
1	Items	Price	Quantity	Discounted Price	
2	Shirts	₱299.50	4	₱284.53	=H2*C2
3	Shorts	₱125.00	10	₱112.50	
4	Shoes	₱500.00	5	₱250.00	

I2 =H2*C2

	A	B	C	H	I
1	Items	Price	Quantity	Discounted Price	Total Amount
2	Shirts	₱299.50	4	₱284.53	₱1,138.10
3	Shorts	₱125.00	10	₱112.50	₱1,125.00
4	Shoes	₱500.00	5	₱250.00	₱1,250.00

Lastly, compute for the total price on all items, both with original prices and discounted prices. Use the SUM function in D5 and I5.



	D	E
1	Total	Date Pur
2	₱1,198.00	15-
3	₱1,250.00	30-
4	₱2,500.00	15-I
5	=SUM(D2:D4)	

H	I
nted Price	Total Amount
₱284.53	₱1,138.10
₱112.50	₱1,125.00
₱250.00	₱1,250.00
	=SUM(I2:I4)

Now let us change the appearance of cells in the spreadsheet and add colors and lines.

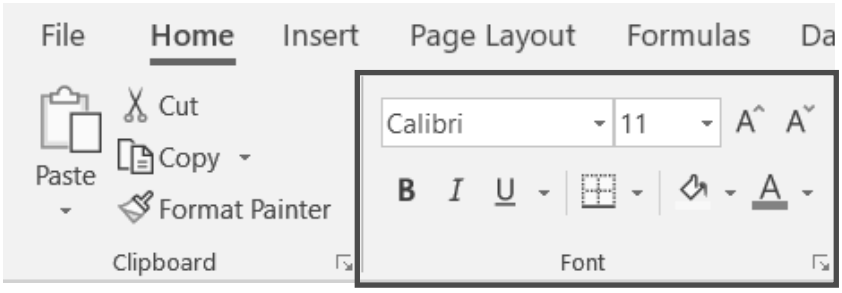
FORMATTING CELL APPEARANCE

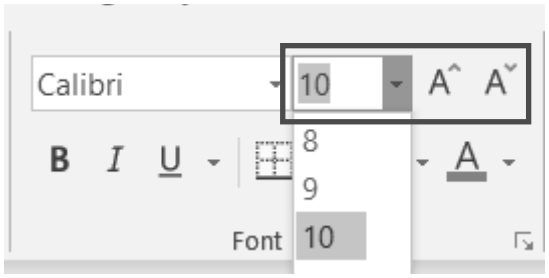
Cells use the same format as default. However, a workbook can have a lot of information, so drawing attention to a specific section can be difficult. Basic formatting can help you customize your workbook's appearance to make it easier to view and understand.

CHANGING FONT SIZE, FONT, AND FONT STYLE

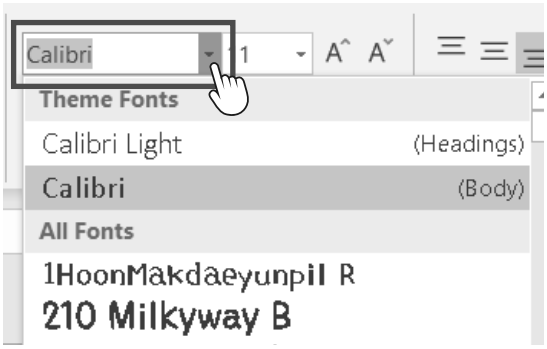
Let us change the font size and font type of the sample workbook about the small clothing business. The Font group can be found in the Home tab.

FONT GROUP



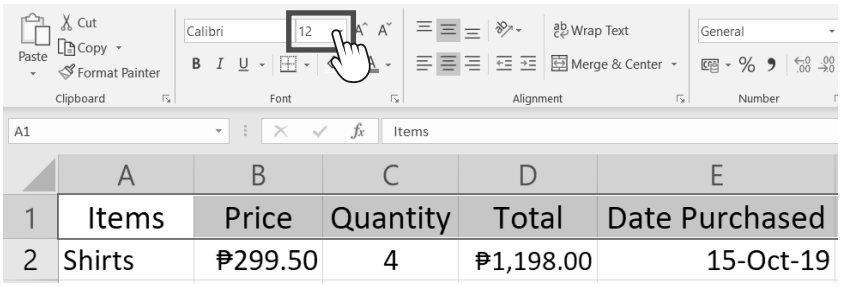


To change the **font size,** click the drop-down arrow and choose the desired size, or click the Increase Font Size or Decrease Font Size button. You can also type a number in the text box.

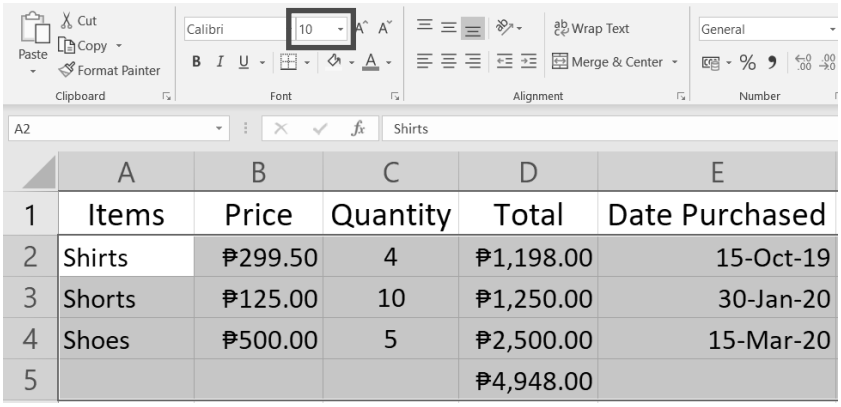


Font is located beside the Font Size drop-down menu. Click the drop-down arrow to choose from the variety of fonts or type the font if you know the name.

1. In this sample, let us change the font size of the headings to 12 and the rest of the cells to 10.

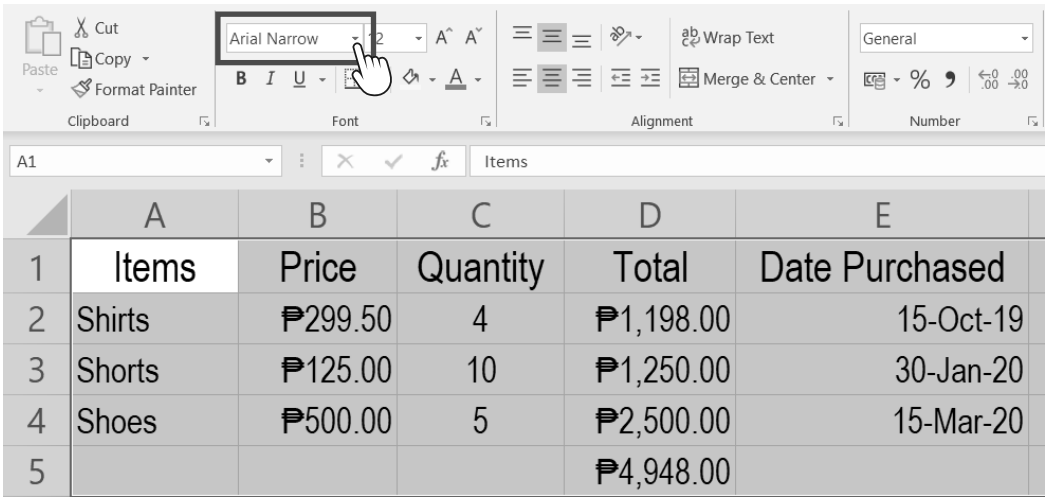


	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19



	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20
5				₱4,948.00	

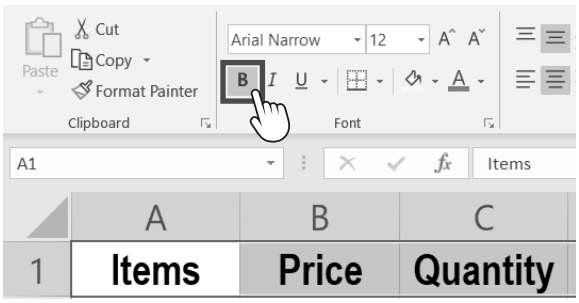
2. Apply the font Arial Narrow to all the cells.



	A	B	C	D	E
1	Items	Price	Quantity	Total	Date Purchased
2	Shirts	₱299.50	4	₱1,198.00	15-Oct-19
3	Shorts	₱125.00	10	₱1,250.00	30-Jan-20
4	Shoes	₱500.00	5	₱2,500.00	15-Mar-20
5				₱4,948.00	

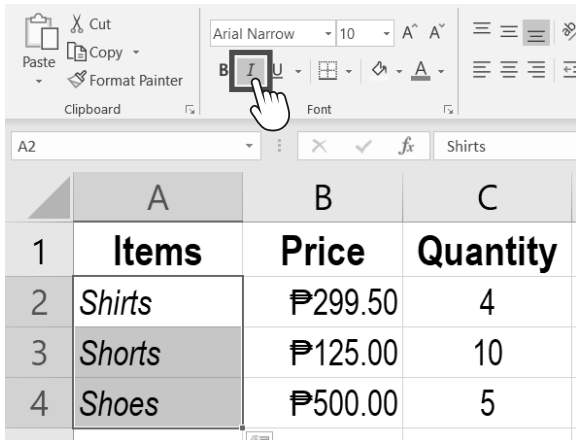
You can also apply font styles. **Font style** can be **bold, italic, underline,** or **double underline.**

3. Let us make all the headings bold. Click the **B** icon in the Font group.



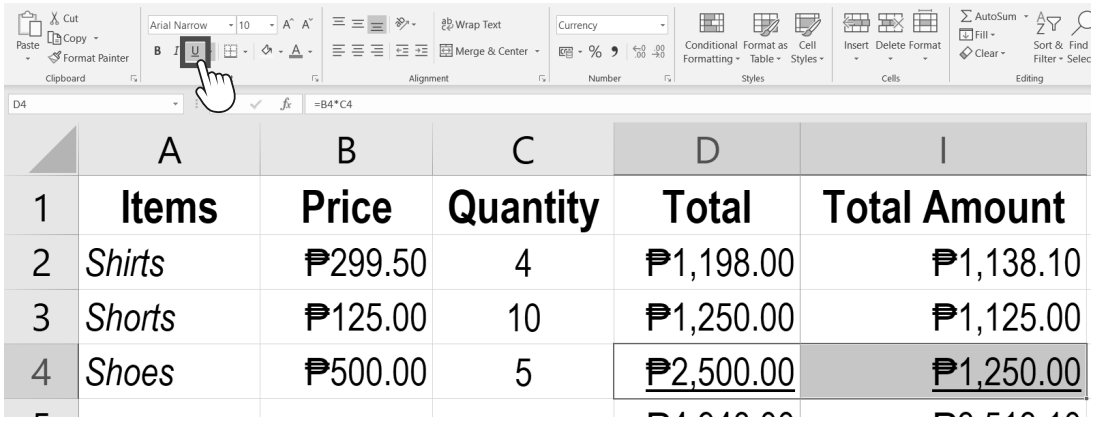
	A	B	C
1	**Items**	**Price**	**Quantity**

4. Next, make A2:A4 italic. Click the *I* icon in the Font group.

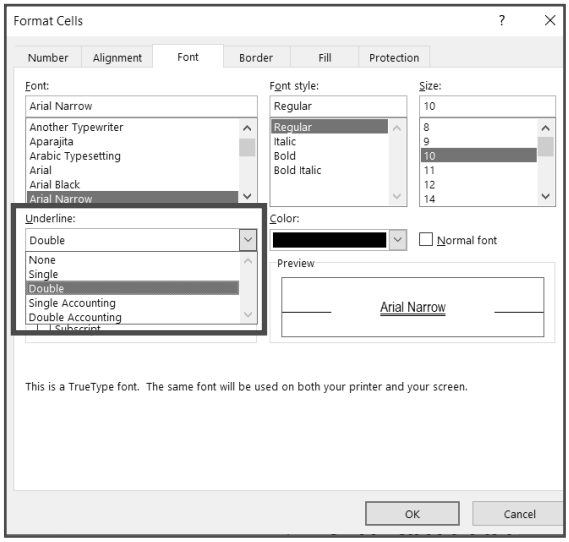


	A	B	C
1	**Items**	**Price**	**Quantity**
2	*Shirts*	₱299.50	4
3	*Shorts*	₱125.00	10
4	*Shoes*	₱500.00	5

5. Apply underline on D4 and I4, the last prices in the items. Click U in the Font group.

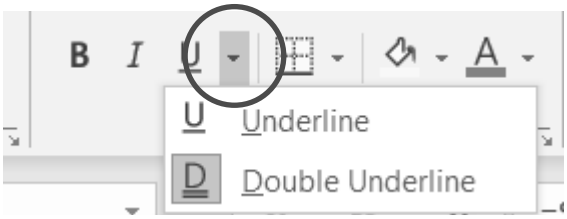


	A	B	C	D	I
1	**Items**	**Price**	**Quantity**	**Total**	**Total Amount**
2	*Shirts*	₱299.50	4	₱1,198.00	₱1,138.10
3	*Shorts*	₱125.00	10	₱1,250.00	₱1,125.00
4	*Shoes*	₱500.00	5	₱2,500.00	₱1,250.00



There are other font styles like double underline. It can be seen if you click the arrow on the lower right corner of the Font group.

6. Apply double underline to D5 and I5, the sum of each total amount. A Format Cells dialog box will appear where there are options for Underline. Click the drop-down arrow then select **Double Underline.**

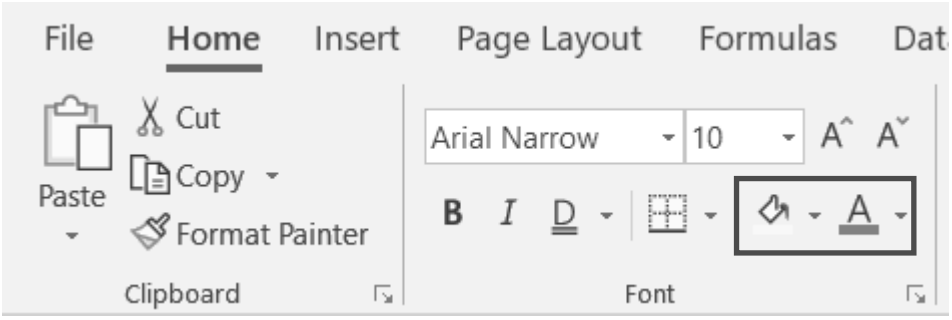


Alternatively, you can click on the drop-down arrow beside the U button.

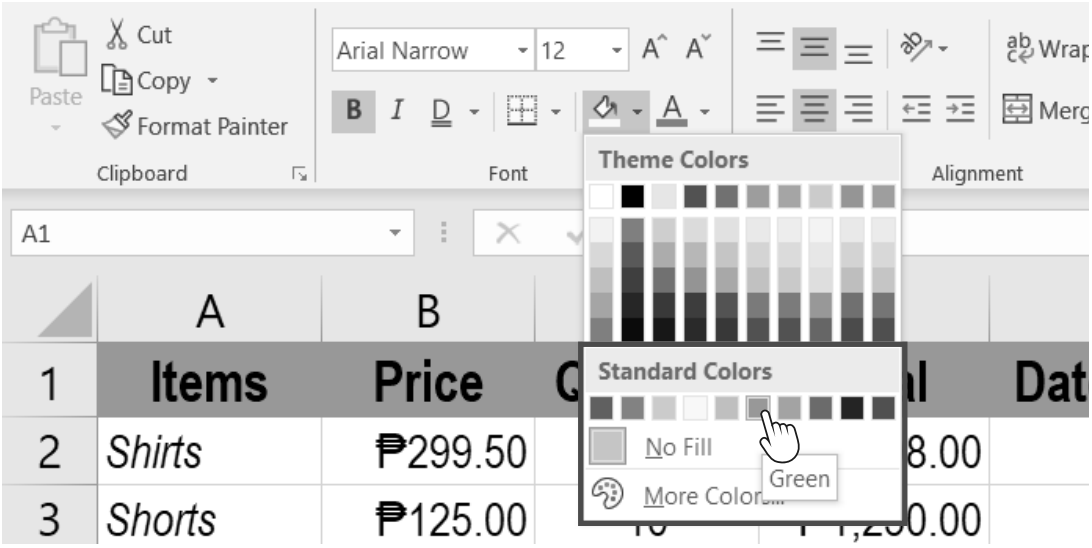
	A	B	C	D	I
5				₱4,948.00	₱3,513.10

APPLYING CELL BACKGROUND AND CONTENT COLOR

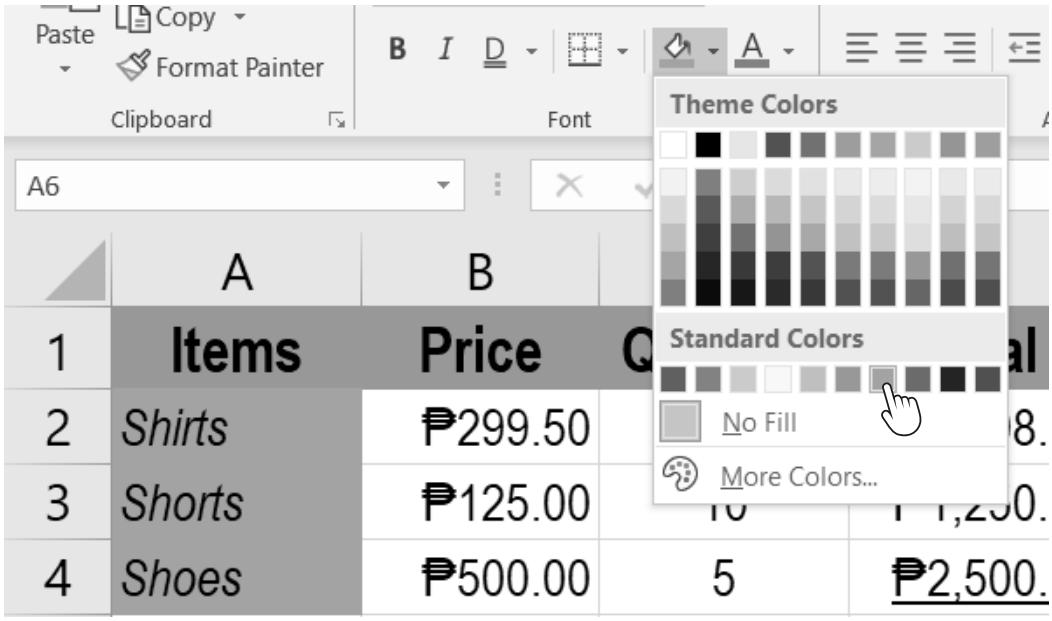
To apply colors, click the Fill Color icon for the background and the Font Color icon for text or content. Both icons can be found beside each other on the Font group of the Home tab.



1. Apply color green to the background of all the headings. Highlight the cells first then click the drop-down arrow in the Fill Color command and choose green in the **Standard Colors.** You can also choose among **Theme Colors** or click **More Colors.**



2. Apply a light blue color for the items under **Items.**



3. Next, color B2:E4 yellow and F2:I4 red.

	A	B	C	D	E	F	G	H	I
1	**Items**	**Price**	**Quantity**	**Total**	**Date Purchased**	**Discount**	**Less**	**Discounted Price**	**Total Amount**
2	*Shirts*	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53	₱1,138.10
3	*Shorts*	₱125.00	10	₱1,250.00	30-Jan-20	10%	₱12.50	₱112.50	₱1,125.00
4	*Shoes*	₱500.00	5	₱2,500.00	15-Mar-20	50%	₱250.00	₱250.00	₱1,250.00
5				₱4,948.00					₱3,513.10

4. For D5 and I5, let us make the background black and the text white.

	A	B	C	D	E	F	G	H	I
1	**Items**	**Price**	**Quantity**	**Total**	**Date Purchased**	**Discount**	**Less**	**Discounted Price**	**Total Amount**
2	*Shirts*	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53	₱1,138.10
3	*Shorts*	₱125.00	10	₱1,250.00	30-Jan-20	10%	₱12.50	₱112.50	₱1,125.00
4	*Shoes*	₱500.00	5	₱2,500.00	15-Mar-20	50%	₱250.00	₱250.00	₱1,250.00
5				₱4,948.00					₱3,513.10

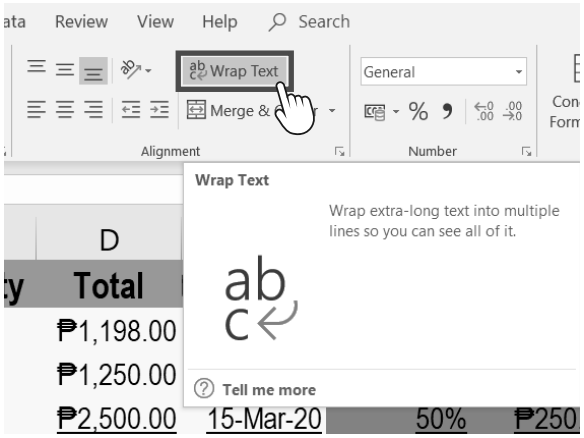
To copy formats without changing the content, use Format Painter. Select the cell or cell range you want to copy the format then click Format Painter in the Clipboard group in the Home tab. Then, apply it to your desired cells. Remember that it will copy both the text format and the cell appearance format.

WRAPPING TEXT CONTENT

Because Excel cells have a default width, long text contents overlap with other cells, but you can easily fix this by adjusting the column widths.

	A	B	C	D	E	F	G	H	I
1	Items	Price	Quantity	Total	te Purchas	Discount	Less	counted P	tal Amount
2	*Shirts*	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53	₱1,138.10
3	*Shorts*	₱125.00	10	₱1,250.00	30-Jan-20	10%	₱12.50	₱112.50	₱1,125.00
4	*Shoes*	₱500.00	5	₱2,500.00	15-Mar-20	50%	₱250.00	₱250.00	₱1,250.00
5				₱4,948.00					₱3,513.10

However, if you want to keep the width as is or shorter so that all the information is there when you print the file, use the Wrap Text command. **Wrap Text** can display long texts by wrapping it into multiple lines in a single cell.



In our example, Date Purchased and Discounted Price are cropped, and Total Amount is overlapping with the J column. To wrap text, click the cells and select **Wrap Text** in the Alignment group in the Home tab.

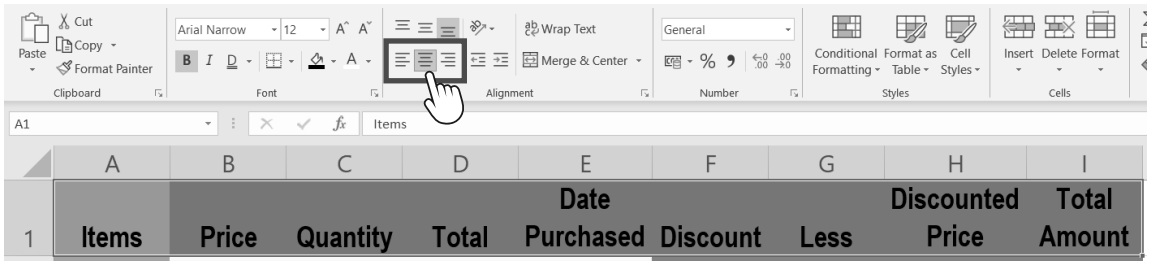
	A	B	C	D	E	F	G	H	I
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price	Total Amount
2	*Shirts*	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53	₱1,138.10
3	*Shorts*	₱125.00	10	₱1,250.00	30-Jan-20	10%	₱12.50	₱112.50	₱1,125.00
4	*Shoes*	₱500.00	5	₱2,500.00	15-Mar-20	50%	₱250.00	₱250.00	₱1,250.00
5				₱4,948.00					₱3,513.10

The row will automatically adjust its height depending on the font size and text entered. Adjust the column widths and row height to arrange the wrapped text.

	A	B	C	D	E	F	G	H	I
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price	Total Amount
2	*Shirts*	₱299.50	4	₱1,198.00	15-Oct-19	5%	₱14.98	₱284.53	₱1,138.10

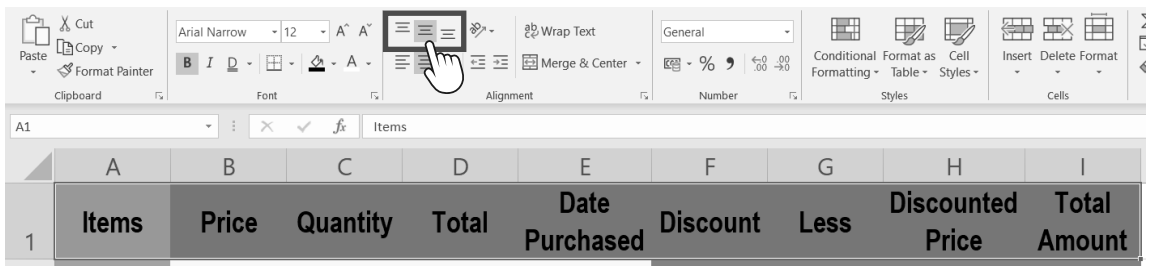
ALIGNING CELL CONTENTS HORIZONTALLY AND VERTICALLY

To apply horizontal alignment, select the cells then select **align left**, which is the default alignment; **center**; or **align right**. For the example, let us align the headings to the center.



	A	B	C	D	E	F	G	H	I
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price	Total Amount

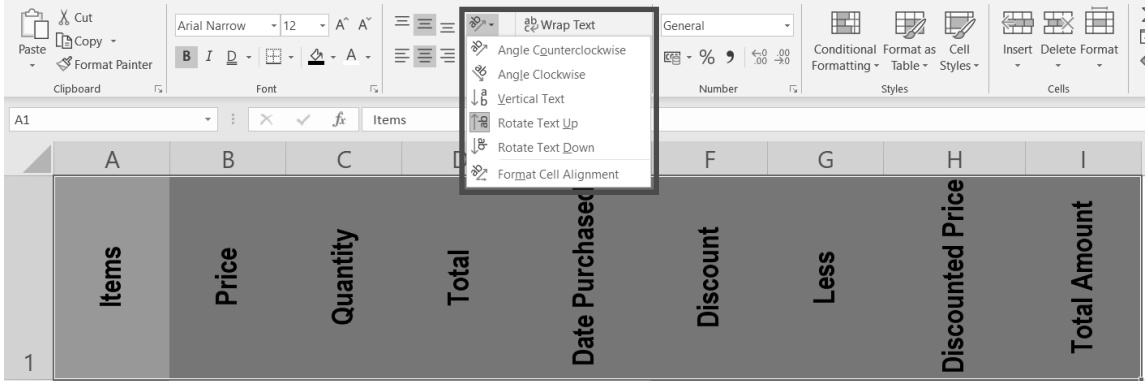
For vertical alignment, the default is bottom alignment. You can apply **top align**, **middle align**, or **bottom align.** Let us align all the headings in the middle of the cell.



	A	B	C	D	E	F	G	H	I
1	Items	Price	Quantity	Total	Date Purchased	Discount	Less	Discounted Price	Total Amount

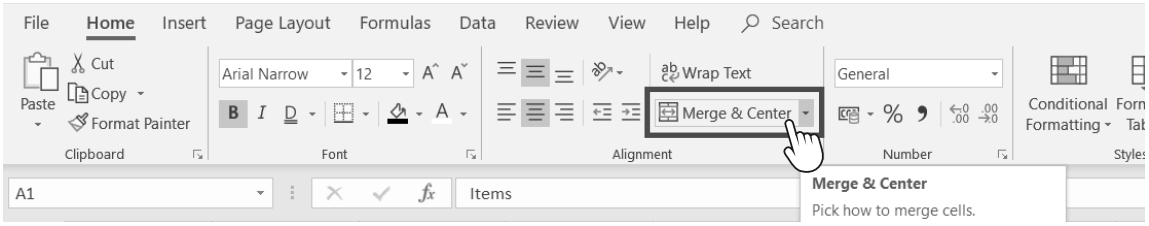
USING CELL CONTENT ORIENTATION

The Orientation command lets you rotate texts vertically or diagonally. It is a great way to label narrow columns. Simply click the Orientation command in the Alignment group then choose your preferred orientation.

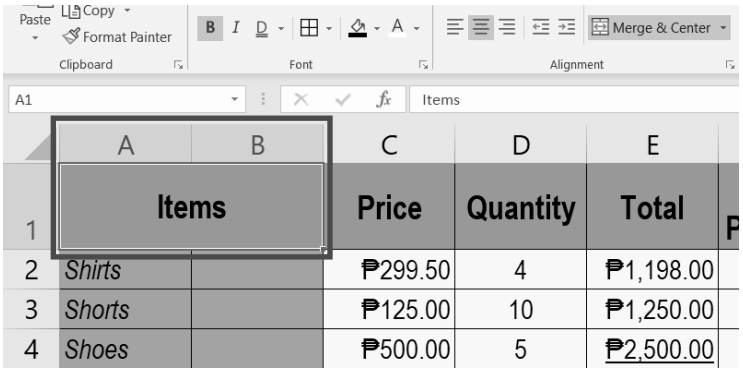


MERGING CELLS

Merging cells is to combine two or more cells. This can be useful if you want to clarify that a label in Excel applies to multiple columns. The Merge & Center command is found in the Alignment group.



Insert a column beside column A and highlight the two cells. Click **Merge & Center.**

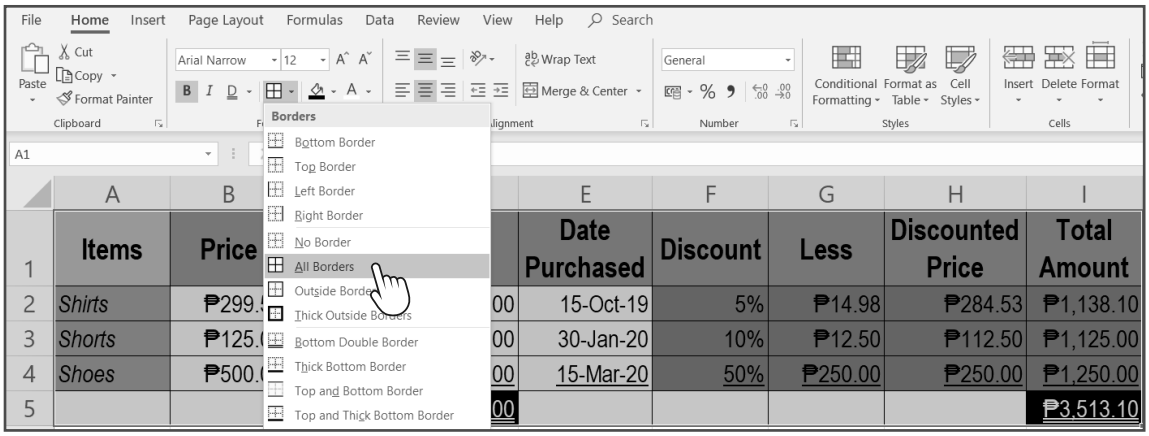


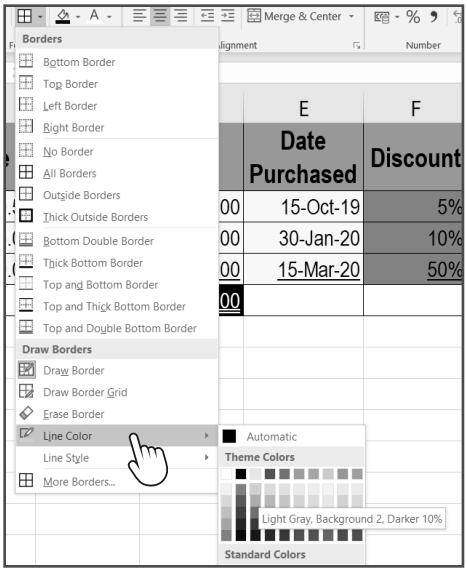
A1 and B1 were combined without affecting the other cells. To unmerge cells, just click the drop-down arrow on Merge & Center command then select **Unmerge Cells.**

APPLYING CELL BORDERS

Cell borders allow you to create a clear boundary among the different cells of your worksheet.

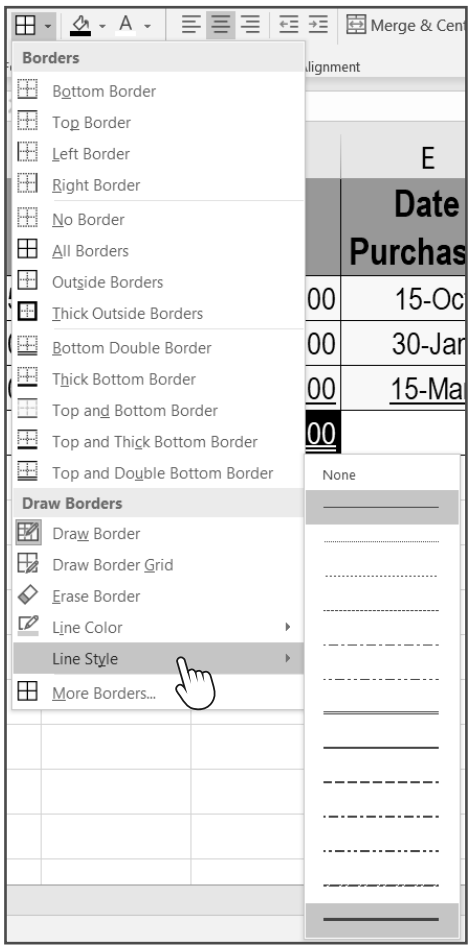
First, select the cells to be modified then click **Borders** in the Font group and choose what border to apply.

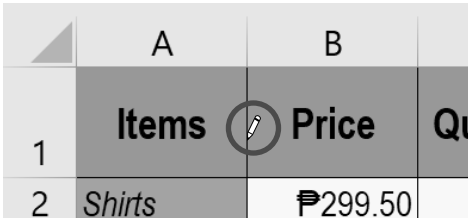




You can also modify the line color and line style. Click the drop-down arrow again and select **Line Color.** Select **Light Gray, Background 2, Darker 10%**, and then select the style at the bottom of the Line Style drop-down list.

You will notice a pencil pointer ready to apply the chosen color and style.





	A	B
1	Items	Price
2	Shirts	₱299.50
3	Shorts	₱125.00
4	Shoes	₱500.00

Apply this to the borders one by one. This lets you personalize your worksheets more.

There is so much you can do in preparing your workbook. You can always improve your spreadsheets and create different finance applications, tabular records, as well as calculate numbers, by using the best features of the software program, formulas and formatting cells.

LESSON 2

SHARPENING YOUR SKILLS

Directions: Determine the formula needed for the following situations. Write your answers on a separate sheet of paper.

A. Formula to get the total number of male and female

	A	B	C
1	Male	Female	Total
2	25	26	 1

B. Formula to get the remaining balance of each budget

	A	B	C	D
1	Expenses	Budget	Used	Balance
2	Food	500	300	 2
3	Fare	1000	250	 3

C. Formula to get the total less price of each item in 20% discount (use absolute cell referencing)

	A	B	C
1	Items	Price	Less Price
2	Chair	550.00	 4
3	Table	2,500.00	 5
4			
5	Discount		
6	20%		

LESSON 2

TREADING THE ROAD TO MASTERY

Directions: Follow the procedure in creating a monthly budget planner in Microsoft Excel. If you do not have a computer, please ask your mobile teacher for assistance.

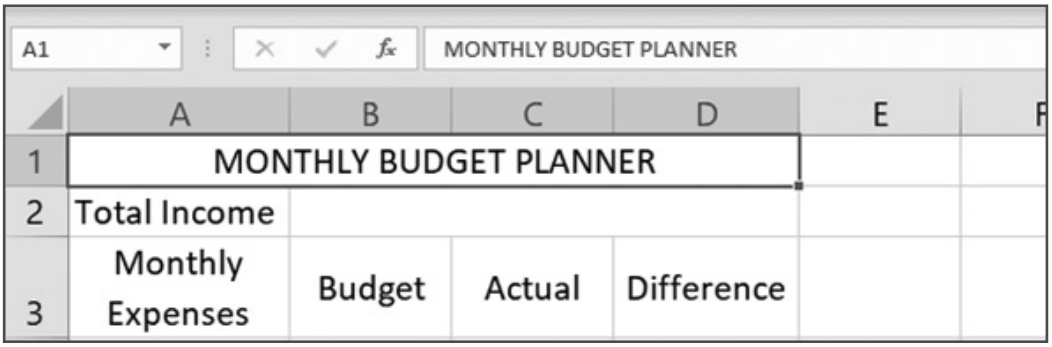
1. Open a blank workbook.
2. Enter the following data starting from A2 to D3.

	A	B	C	D	E	F
1						
2	Total Income					
3	Monthly E	Budget	Actual	Difference		
4	Electricity					
5	Water					
6	Food					
7	Internet					
8	House Rent					
9	Fare/Gas					
10	Personal					
11						

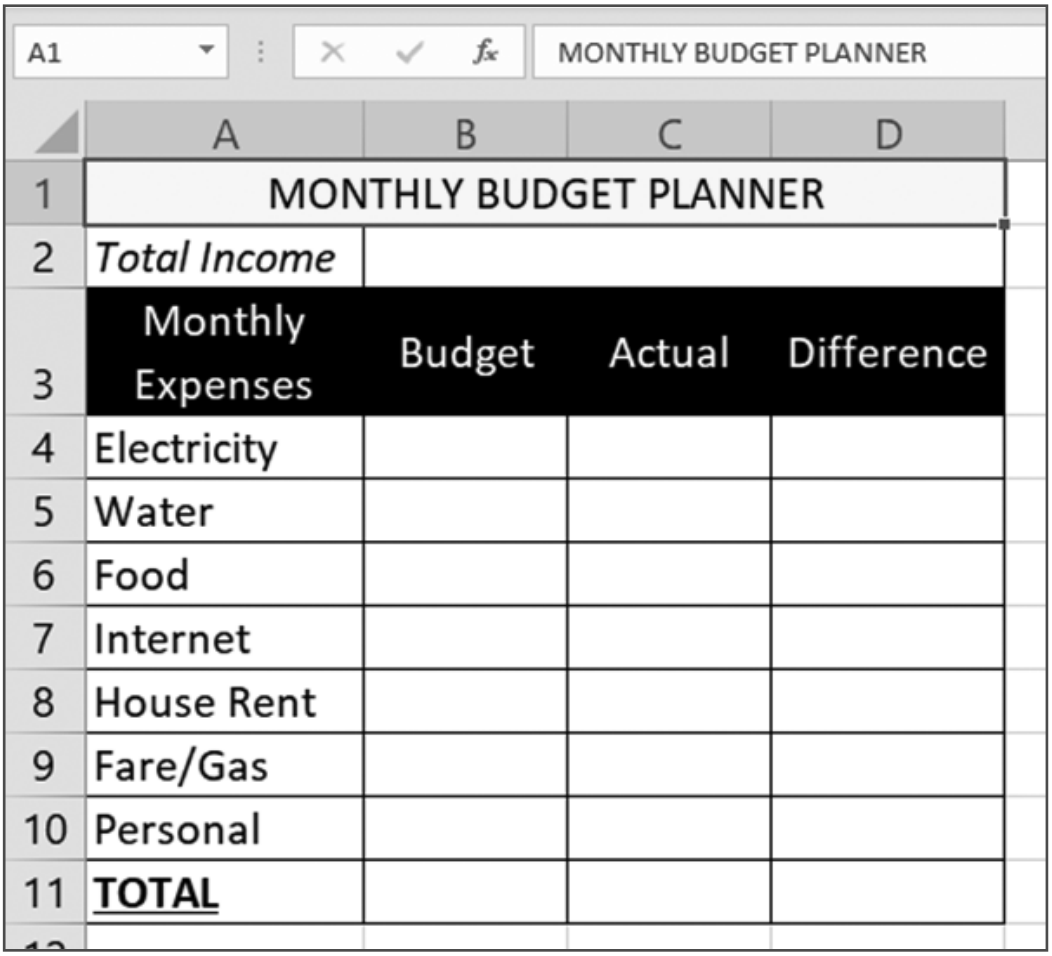
3. Wrap Text A3 then adjust column widths. Then, highlight A3:D3, apply middle align vertically and align center horizontally.
4. Merge cell range B2:D2.

	A	B	C	D	E	F
1						
2	Total Income					
3	Monthly Expenses	Budget	Actual	Difference		

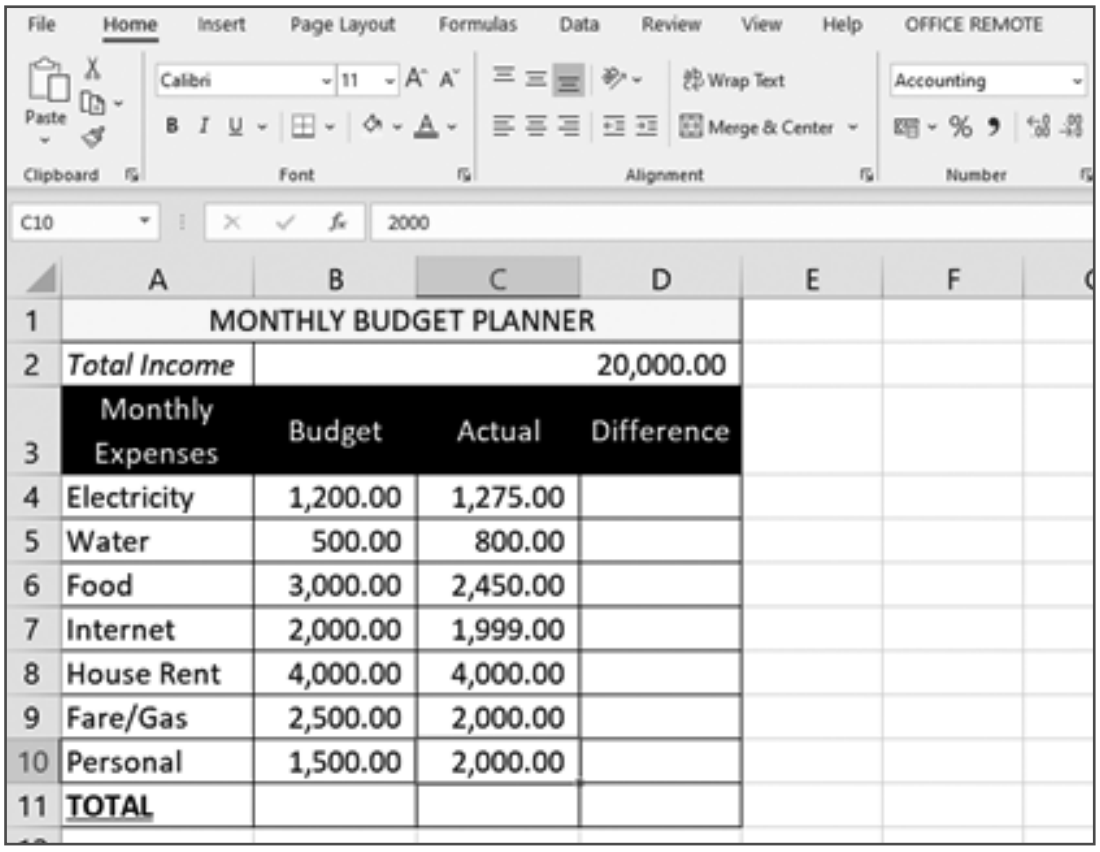
5. Type "Monthly Budget Planner" in A1. Highlight A1:D1 then apply the Merge & Center command.



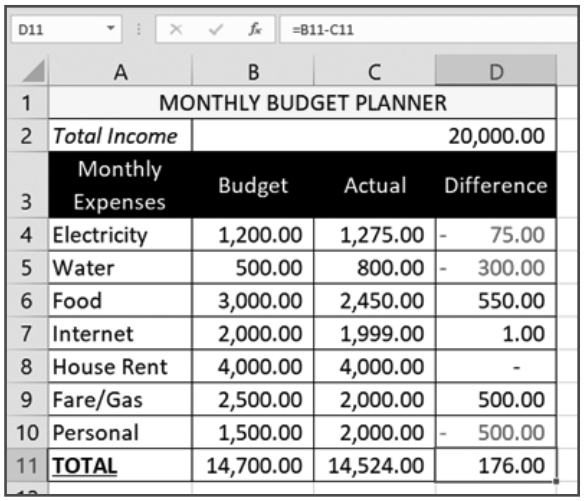
6. Apply the same format below. Include TOTAL in A11.



7. Fill in the cells with the one below. All the numbers should be separated by a comma, have two decimal places, and with an Accounting number format.



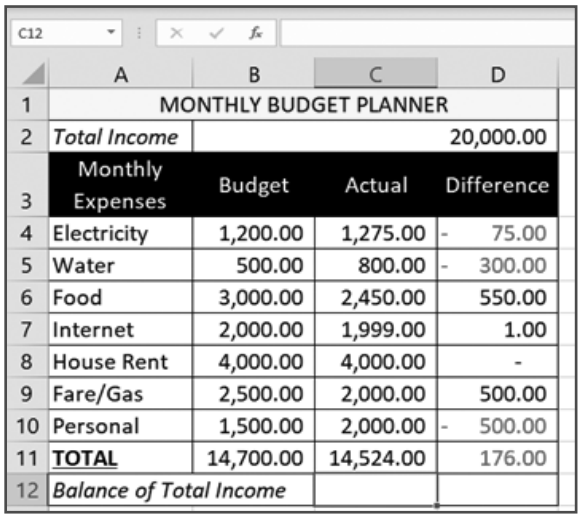
	A	B	C	D	E	F
1	MONTHLY BUDGET PLANNER					
2	*Total Income*			20,000.00		
3	Monthly Expenses	Budget	Actual	Difference		
4	Electricity	1,200.00	1,275.00			
5	Water	500.00	800.00			
6	Food	3,000.00	2,450.00			
7	Internet	2,000.00	1,999.00			
8	House Rent	4,000.00	4,000.00			
9	Fare/Gas	2,500.00	2,000.00			
10	Personal	1,500.00	2,000.00			
11	**TOTAL**					



	A	B	C	D
1	MONTHLY BUDGET PLANNER			
2	*Total Income*			20,000.00
3	Monthly Expenses	Budget	Actual	Difference
4	Electricity	1,200.00	1,275.00	- 75.00
5	Water	500.00	800.00	- 300.00
6	Food	3,000.00	2,450.00	550.00
7	Internet	2,000.00	1,999.00	1.00
8	House Rent	4,000.00	4,000.00	-
9	Fare/Gas	2,500.00	2,000.00	500.00
10	Personal	1,500.00	2,000.00	- 500.00
11	**TOTAL**	14,700.00	14,524.00	176.00

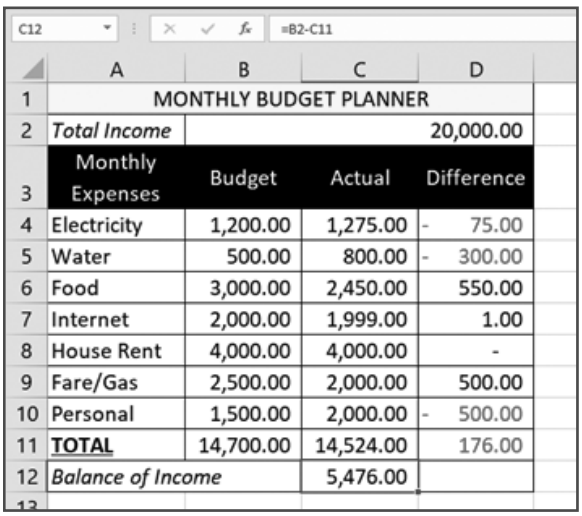
8. Enter a formula for the Total Budget, Total Actual, and Total Difference. Use the SUM function.
9. Enter a formula for the difference of each expense. If the answer is negative, color the font red.

10. Include the Balance of Total Income in A12:B12, which should be merged.



	A	B	C	D
1	MONTHLY BUDGET PLANNER			
2	*Total Income*			20,000.00
3	Monthly Expenses	Budget	Actual	Difference
4	Electricity	1,200.00	1,275.00	- 75.00
5	Water	500.00	800.00	- 300.00
6	Food	3,000.00	2,450.00	550.00
7	Internet	2,000.00	1,999.00	1.00
8	House Rent	4,000.00	4,000.00	-
9	Fare/Gas	2,500.00	2,000.00	500.00
10	Personal	1,500.00	2,000.00	- 500.00
11	**TOTAL**	14,700.00	14,524.00	176.00
12	*Balance of Total Income*			

11. Enter a formula for the Balance of Total Income in C12. Total Income should be subtracted from the Total Actual.



	A	B	C	D
1	MONTHLY BUDGET PLANNER			
2	*Total Income*			20,000.00
3	Monthly Expenses	Budget	Actual	Difference
4	Electricity	1,200.00	1,275.00	- 75.00
5	Water	500.00	800.00	- 300.00
6	Food	3,000.00	2,450.00	550.00
7	Internet	2,000.00	1,999.00	1.00
8	House Rent	4,000.00	4,000.00	-
9	Fare/Gas	2,500.00	2,000.00	500.00
10	Personal	1,500.00	2,000.00	- 500.00
11	**TOTAL**	14,700.00	14,524.00	176.00
12	*Balance of Income*		5,476.00	

12. Save your workbook as XLSX in the Documents folder with the file name: Monthly Budget Planner_[lastname] (e.g., Monthly Budget Planner_Cruz).

How was the activity? Did you find it easy? You can also make your own budget plan according to your personal or family income, or create other finance planners. Were you able to start analyzing the data in the activity? If yes, that is good because spreadsheets should also be used for analyzing results after carefully organizing data. Data can also be analyzed visually using charts in spreadsheet.

LESSON 3

SETTING THE PATH

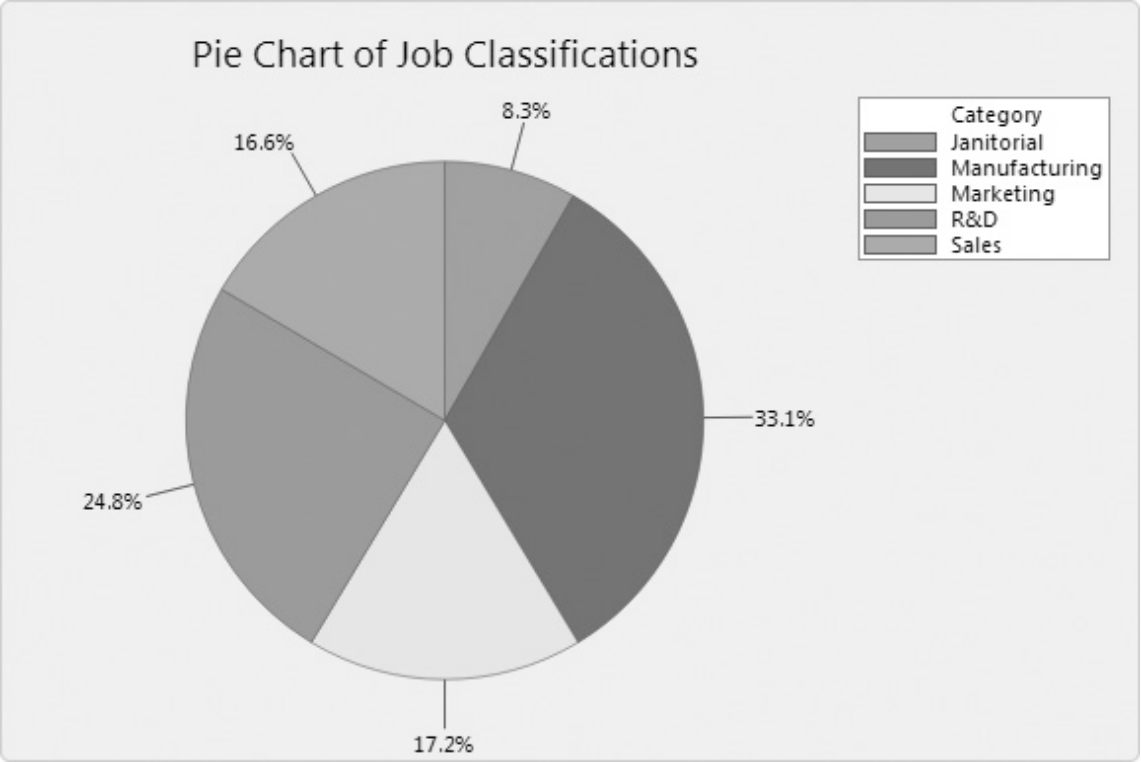
INSERTING CHARTS AND FINALIZING SPREADSHEET

After this lesson, learners should be able to

- create different types of charts in a spreadsheet;
- edit charts in a spreadsheet; and
- demonstrate the preparation of outputs in a spreadsheet.

LESSON 3
TRYING THIS OUT

Directions: Answer the following questions based on the given pie chart of job classifications below. Write your answers on a separate sheet of paper.



1. How many job classifications are presented in the chart?
2. Which is likely the largest to be applied by the people?
3. What percentage does "Janitorial" have in the chart?
4. Which job category has a percentage of 24.8%?
5. What is the overall percentage of the job classifications?

Were you able to analyze the pie chart properly? If yes, that is excellent because it means you are knowledgeable in visual analysis. If not, do not worry because this lesson will show you how to present and interpret data using charts in a spreadsheet.

LESSON 3

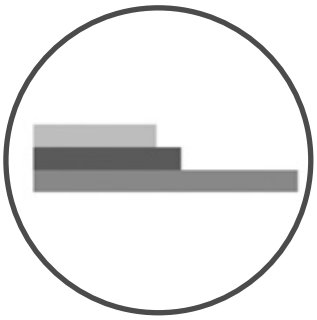
UNDERSTANDING WHAT YOU DID

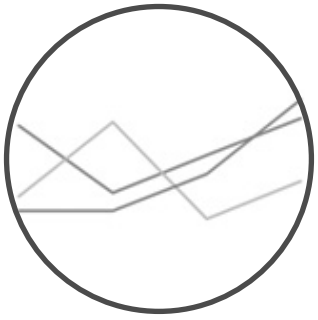
Workbooks that contain a lot of data are sometimes difficult to analyze and interpret. Charts allow you to illustrate your workbook data graphically, which makes it easy to visualize comparisons and interpret results.

Microsoft Excel has different types of charts that allow you to choose what is best for your data. The most frequently used types of charts are as follows:

Column charts use vertical bars to represent data. They are typically used to compare several items in a specific range of values.

Bar charts work just like column charts, but they use horizontal bars instead of vertical bars.





Line charts are ideal for showing trends. The data points are connected with lines, making it easy to see whether values are increasing or decreasing over time.

Pie charts make it easy to compare proportions. Each value is shown as a slice of the pie, so it is easy to see which values make up the percentage of a whole.

To present data graphically, you should also know how to interpret data according to its parts. A chart is usually composed of a chart title, legends, vertical axis, and horizontal axis. You will be able to understand each one once you start creating charts in Microsoft Excel.

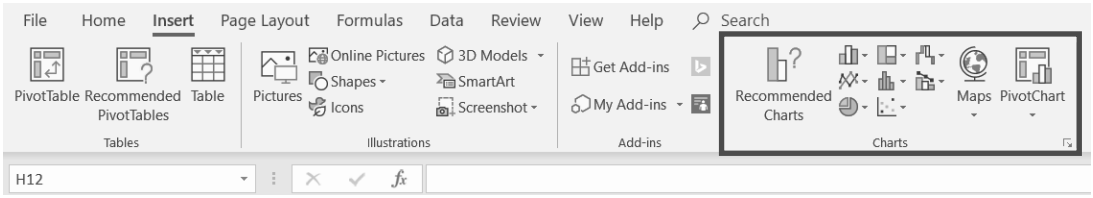
CREATING A CHART

C1 | Remarks

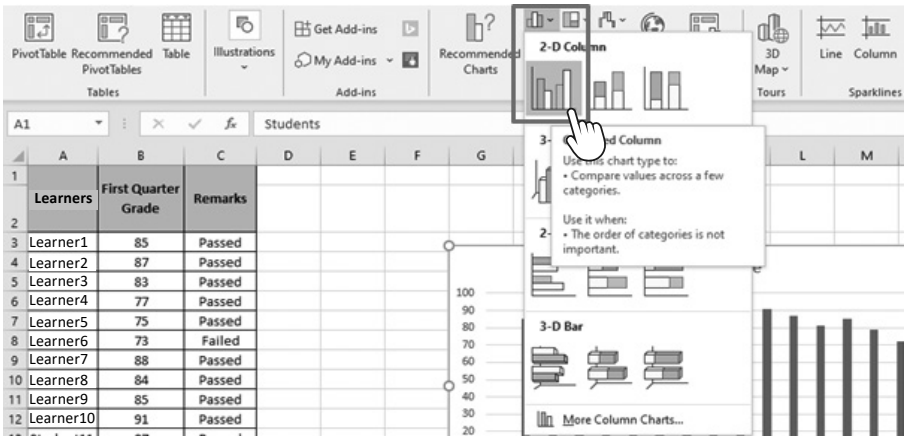
	A	B	C	D
1	Learners	First Quarter Grade	Remarks	
2				
3	Learner1	85	Passed	
4	Learner2	87	Passed	
5	Learner3	83	Passed	
6	Learner4	77	Passed	
7	Learner5	75	Passed	
8	Learner6	73	Failed	
9	Learner7	88	Passed	
10	Learner8	84	Passed	
11	Learner9	85	Passed	
12	Learner10	91	Passed	
13	Learner11	87	Passed	
14	Learner12	81	Passed	
15	Learner13	85	Passed	
16	Learner14	79	Passed	
17	Learner15	72	Failed	

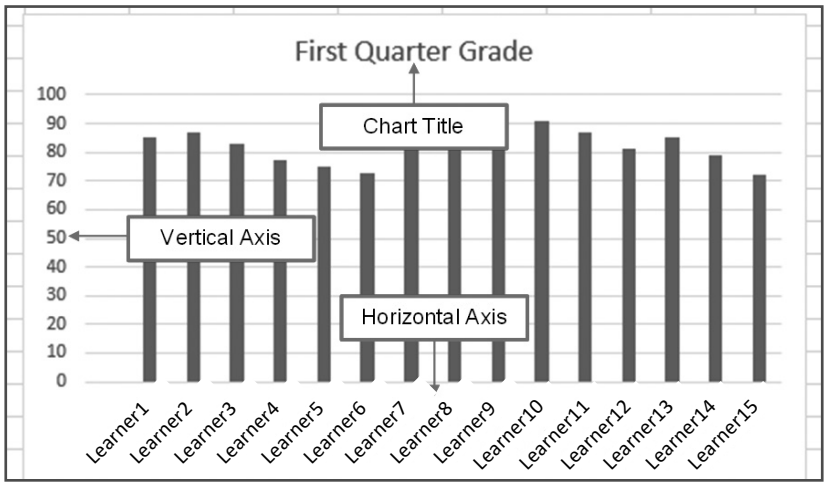
To create a chart, you must first have your data in the worksheet. Let us create a dummy grading sheet for first quarter.

1. To insert a chart, select the data you will need. In our example, select A1:B17. The remarks column is not included.
2. Click the Insert tab and find the Charts group.

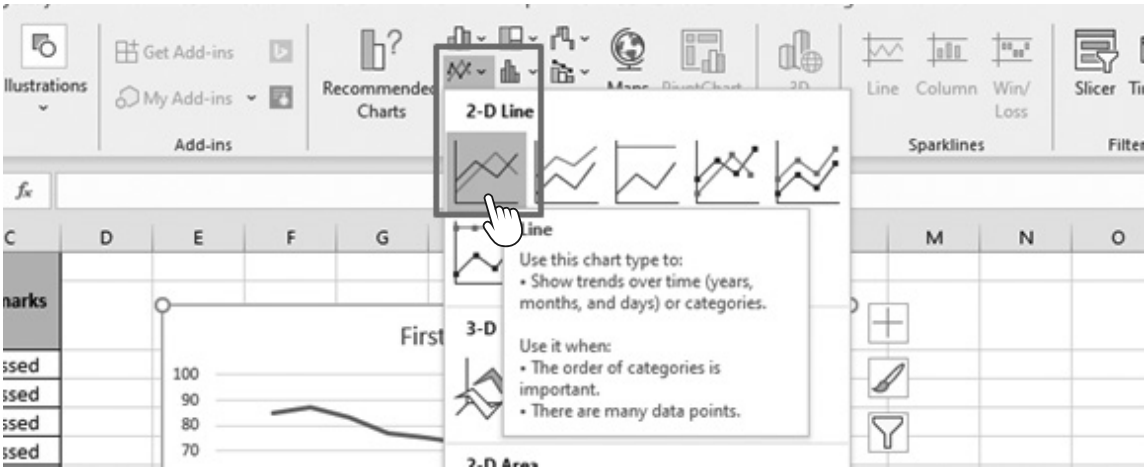


3. Choose the column and bar chart type and click the drop-down arrow to choose **Clustered Column** under **2-D Column** as the subtype. A column chart will be displayed on the right side of the worksheet.

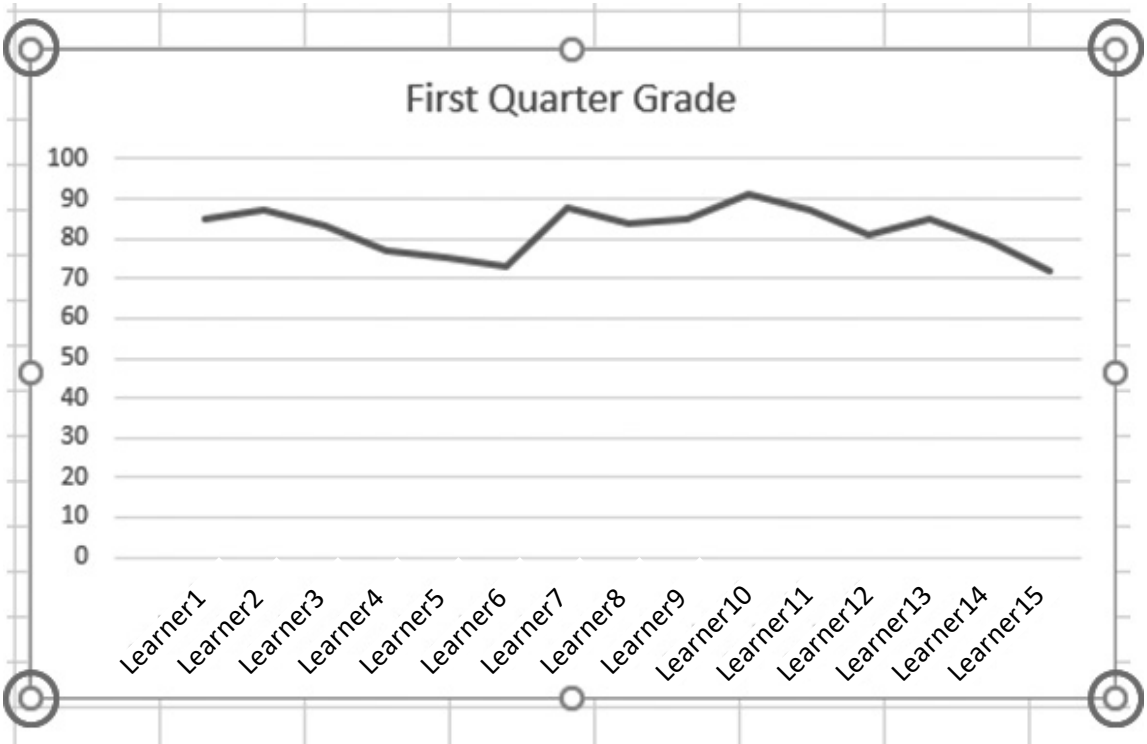




To change a chart type, select the chart, click the Line Chart icon in the Charts group. Select **Line** in **2-D Line.**



To resize, simply select any corner of the chart then hold the mouse and resize.



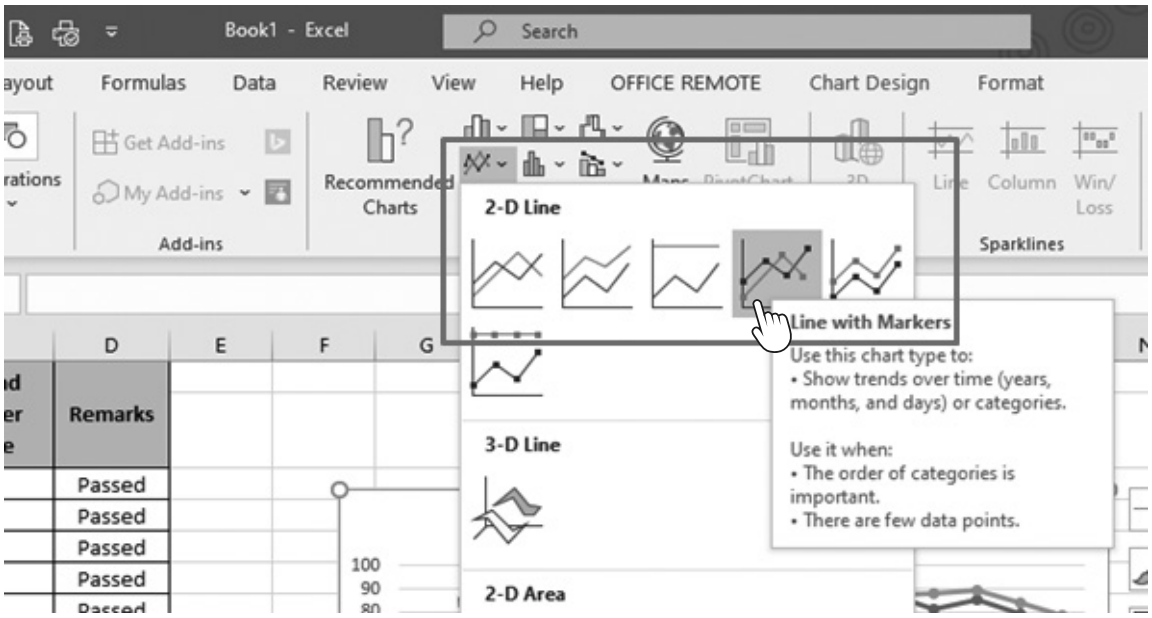
You can move a chart by dragging it to any location in a worksheet. To delete a chart, just select the chart then press the Del key on the keyboard.

H3

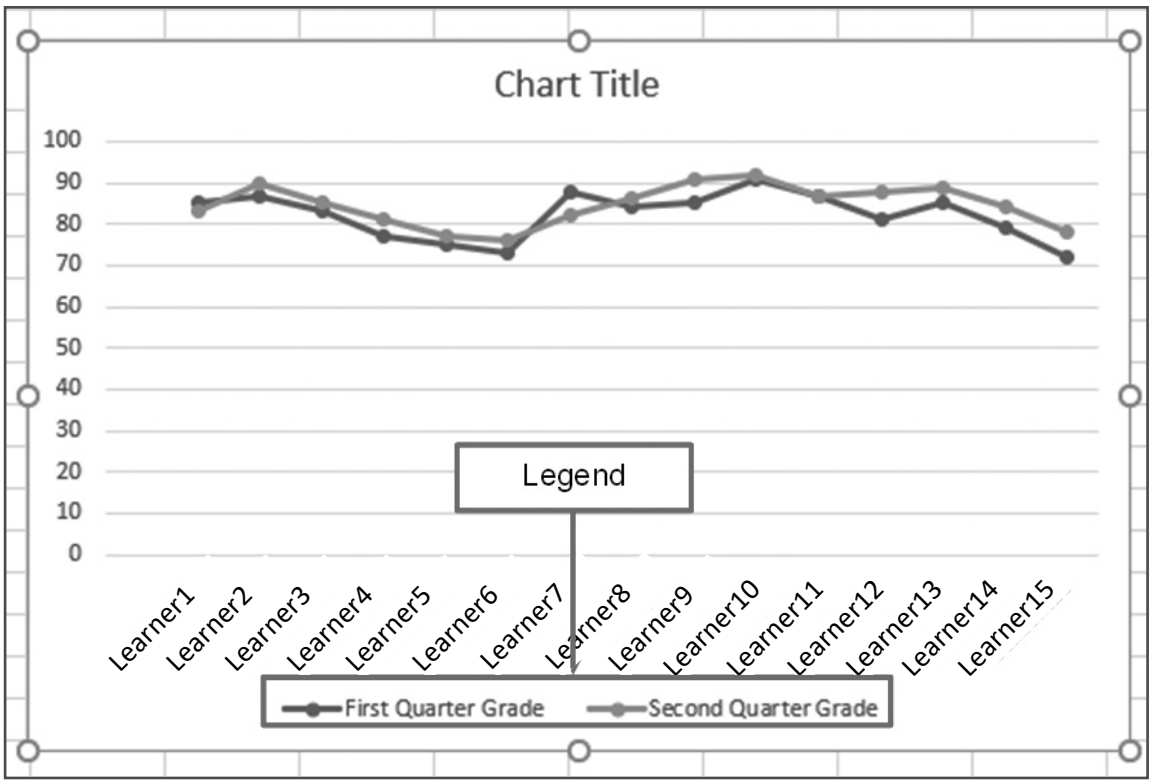
	A	B	C	D
1	Learners	First Quarter Grade	Second Quarter Grade	Remarks
2				
3	Learner1	85	83	Passed
4	Learner2	87	90	Passed
5	Learner3	83	85	Passed
6	Learner4	77	81	Passed
7	Learner5	75	77	Passed
8	Learner6	73	76	Failed
9	Learner7	88	82	Passed
10	Learner8	84	86	Passed
11	Learner9	85	91	Passed
12	Learner10	91	92	Passed
13	Learner11	87	87	Passed
14	Learner12	81	88	Passed
15	Learner13	85	89	Passed
16	Learner14	79	84	Passed
17	Learner15	72	78	Failed

4. Let us delete the first chart and update our data.

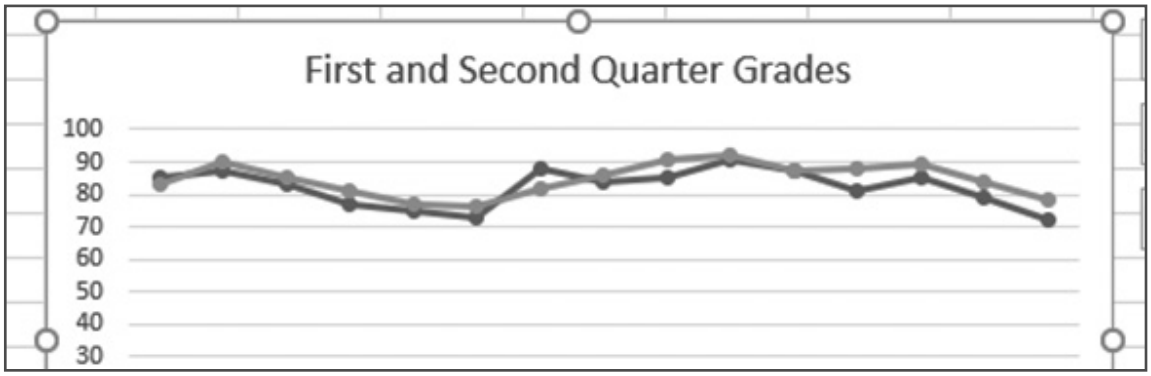
5. Click **Line Chart** in the Charts group and choose **Line with Markers.**



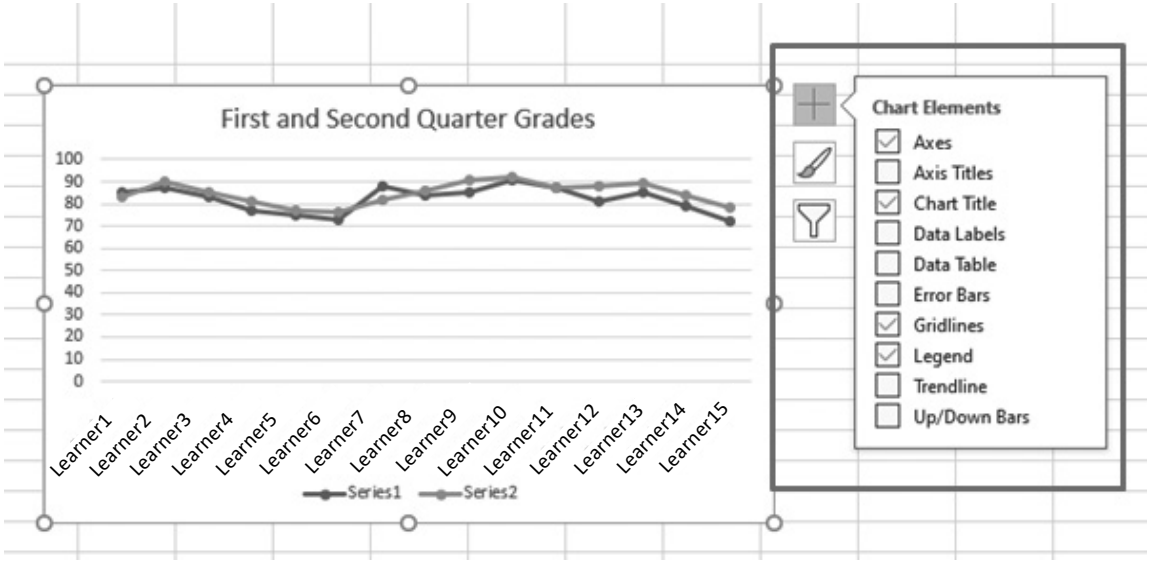
Since the data was updated, you will now see two lines: one for the First Quarter Grade and one for the Second Quarter Grade.



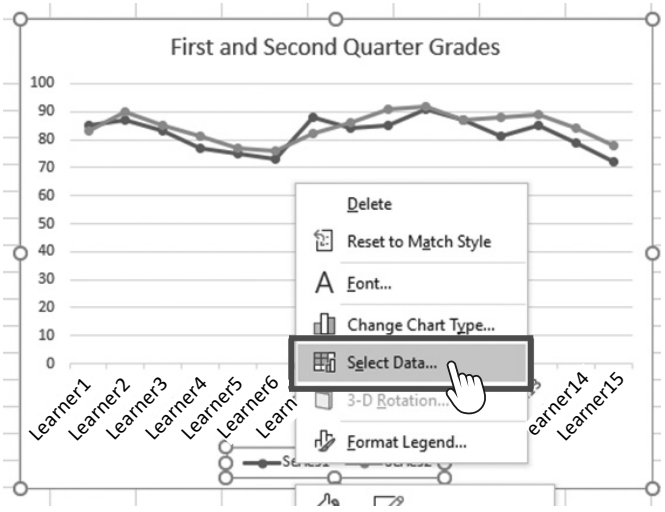
You will see that another part of the chart appears because of the additional data, but there was no chart title assigned; instead, it just has a "Chart Title" caption. To edit the chart title, click on the area of the chart title then replace it with "First and Second Quarter Grades."



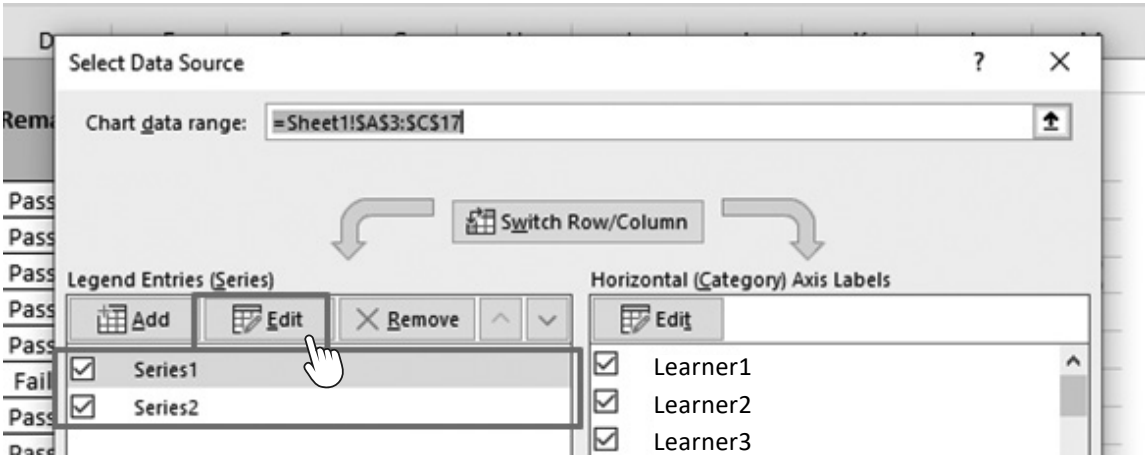
To remove a chart, click the plus sign button or **Chart Elements** at the right corner of the chart then uncheck Chart Title. If you want to add a title, check Chart Title.



To edit the legend at the bottom, right-click the legend then choose **Select Data.**

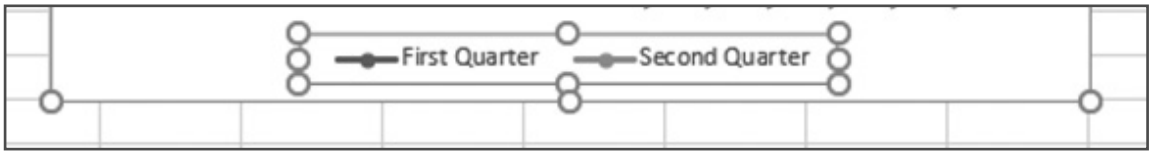


Then, choose the legend to be edited. Click **Edit** on the dialog box.



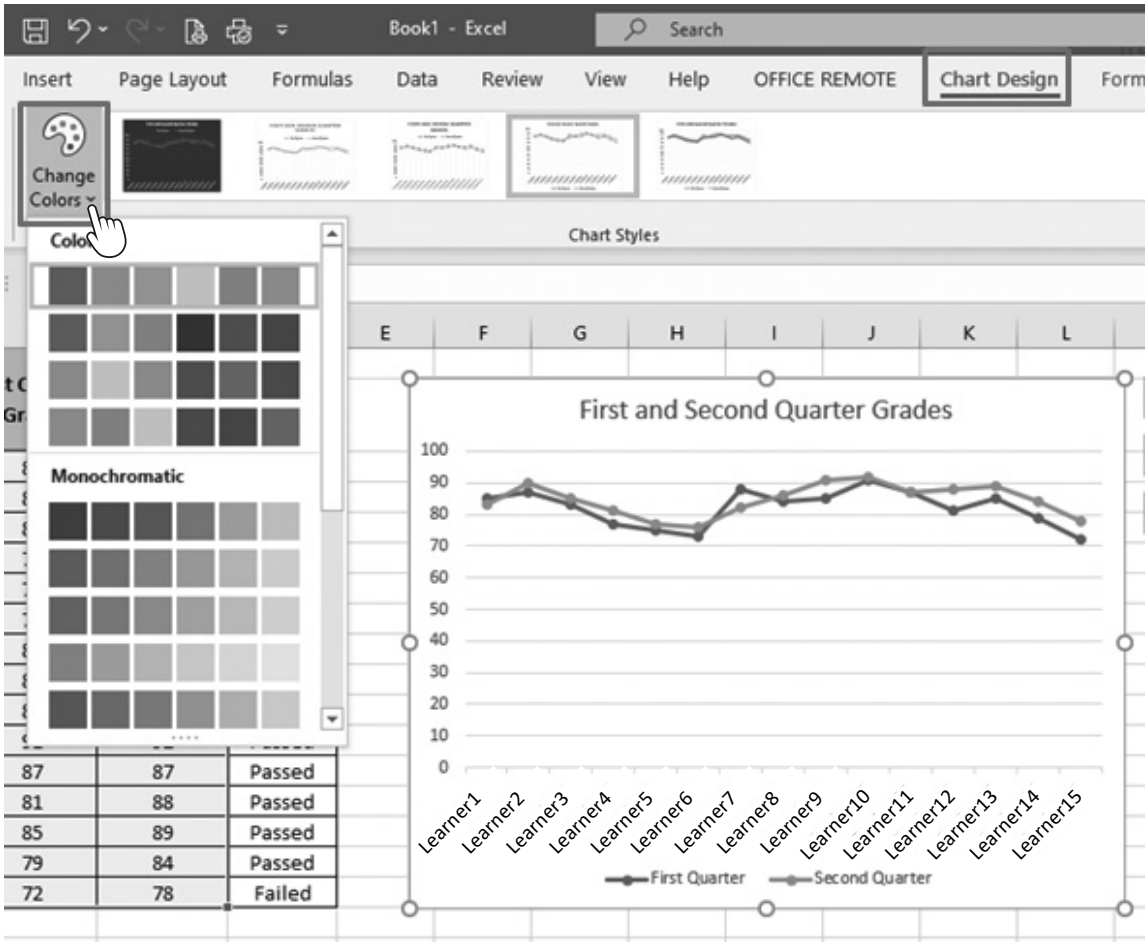
In the **Series Name**, type First Quarter. Repeat the same procedure for Series 2. Then, click **OK.**

The legend is now changed.



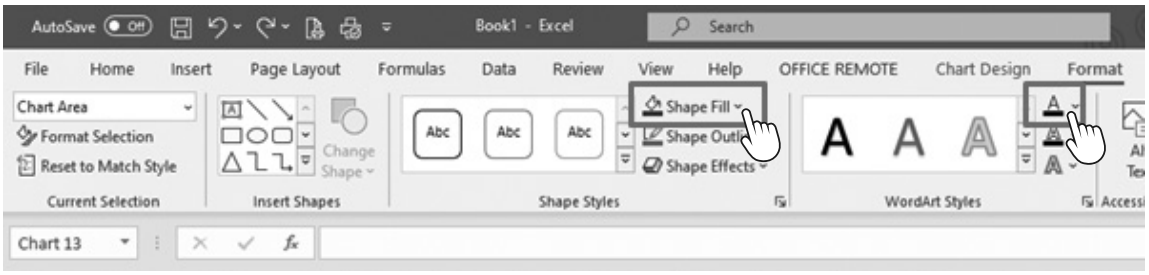
CHANGING COLORS IN A CHART

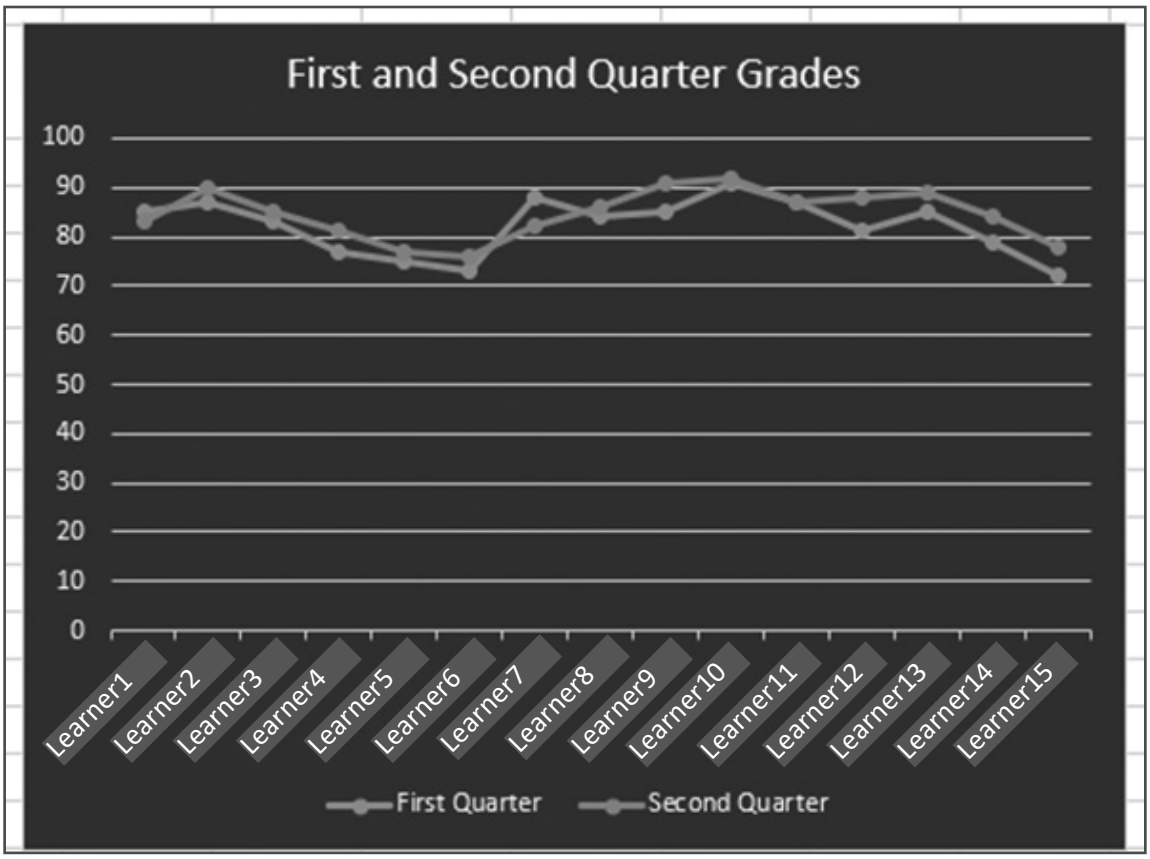
To change colors, select the chart and click the Chart Design tab. Choose **Change Colors** then pick a set of colors.



To change the background color and text color of the chart, select the parts that you want to change the color, then select **Format** beside **Chart Design.**

To change the color of the background, choose **Shape Fill** in the Shape Styles group; for the text color, choose **Text Fill** in the WordArt Styles group.





To change the font, font size, font color, or font style on the text of each part, simply use the Font group in the Home tab.

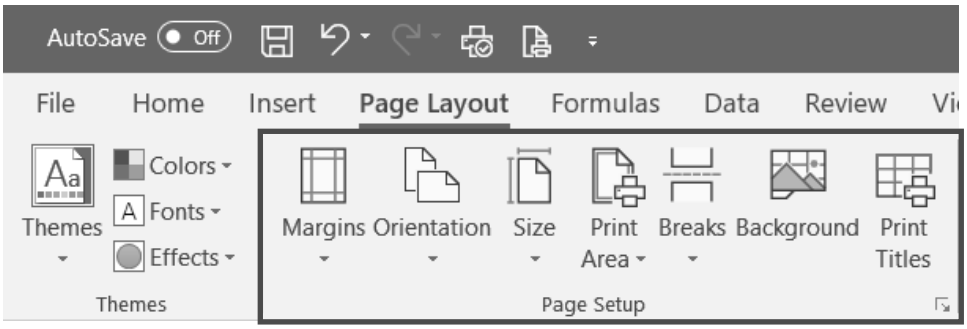
These formats can be applied to different types of chart available in Microsoft Excel.

FINALIZING A SPREADSHEET

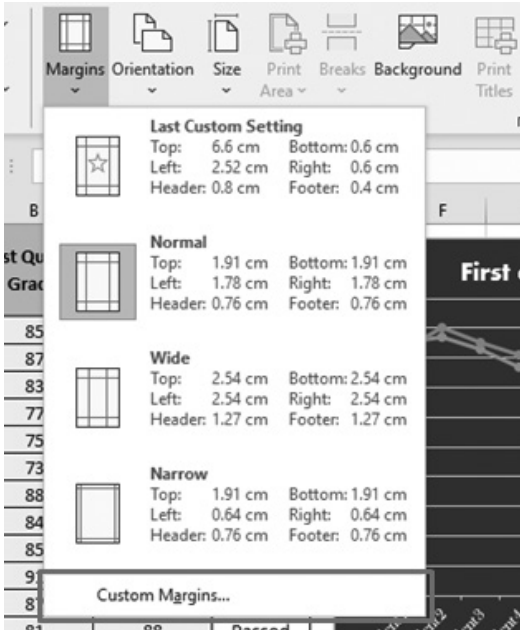
Before printing the spreadsheet, check its setup.

Let us begin with the page setup of the spreadsheet. **Page Setup** is in the Page Layout tab, which includes the margins, paper size, and document orientation.

PAGE SETUP GROUP

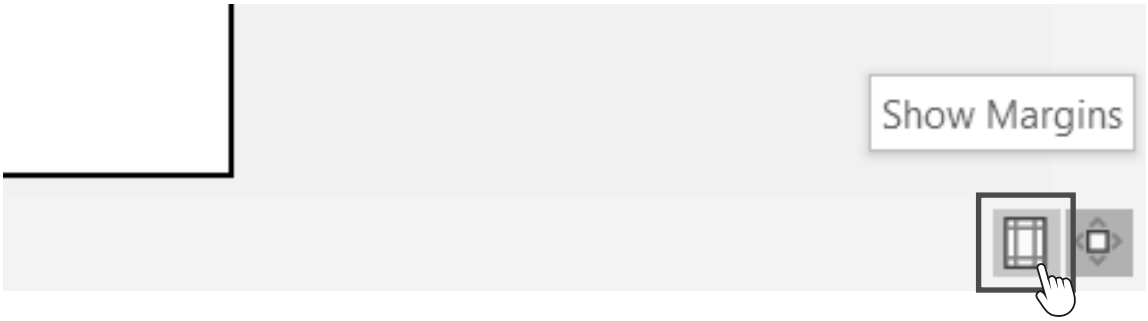


MARGINS

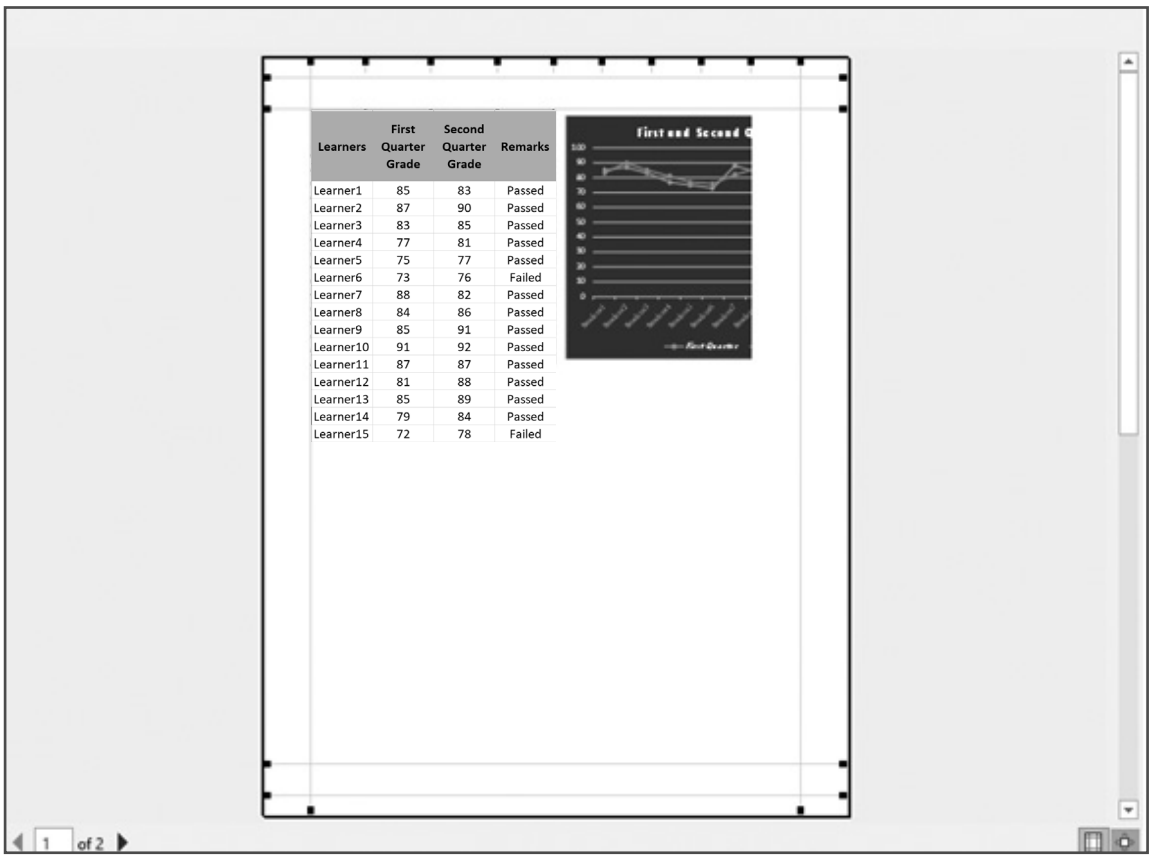


To edit the margins, click **Margins**. Decide which option you need for your spreadsheet. Normal is the default, but if you like none of the options, customize with **Custom Margins.**

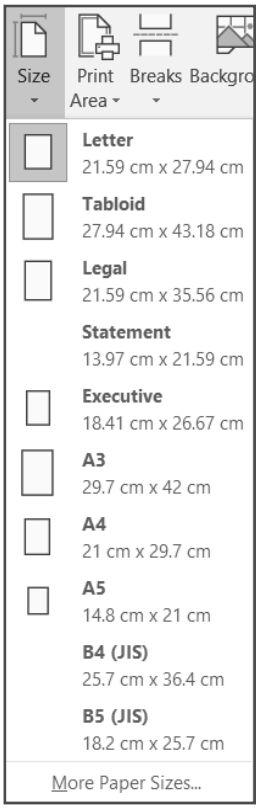
When you apply changes in the margin, you will not be able to see the effect unless you go to Print Preview. From there, click **Show Margin** in the lower right corner of the preview to adjust the margins manually.



Margins will now be visible for manual adjustment. Just click and drag the lines to apply changes.



SIZE AND ORIENTATION

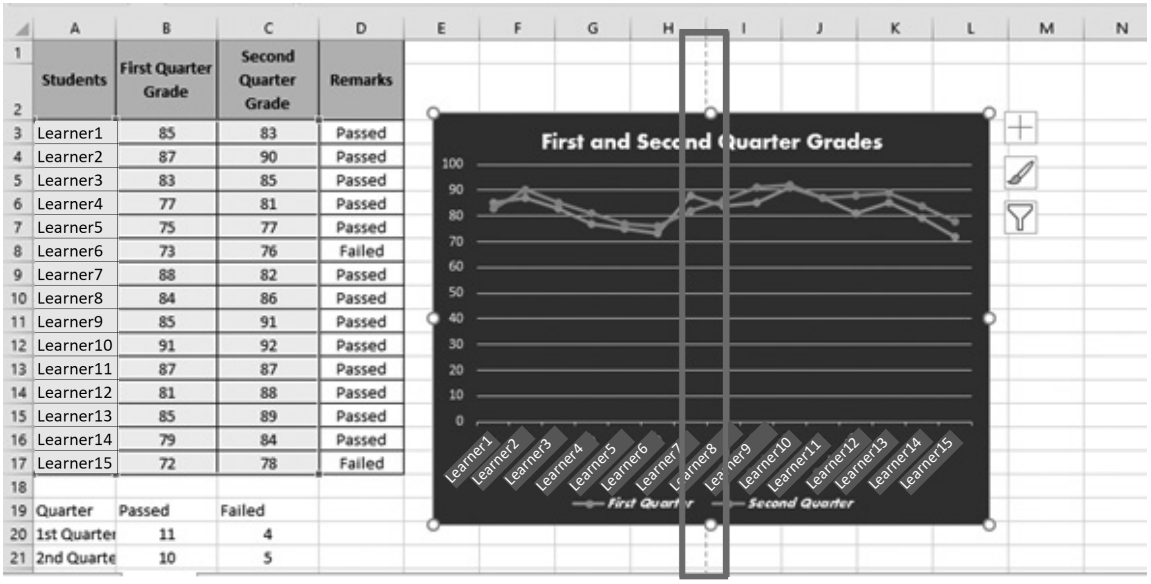


Paper **Size** can be set up before you begin doing your spreadsheet. The default size is Letter size, but you can always choose which one you need.

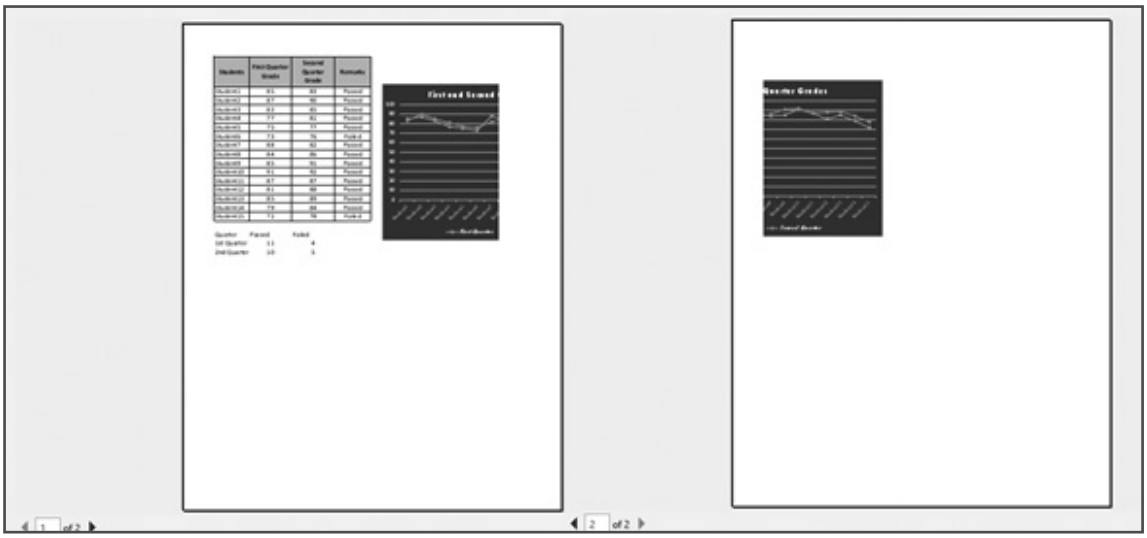
Unlike word processors, you are unable to see the paper size in spreadsheets until you set up the size or go to **Print Preview.**

Once you have set up the size, you will see a marquee line indicating the boundary of the page.

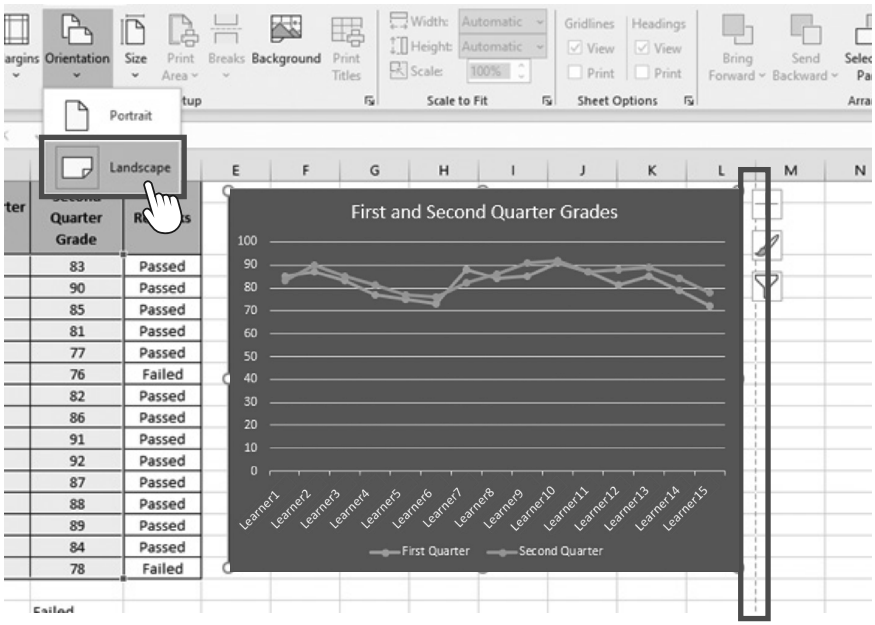
Notice that the half of the chart overlapped the marquee line. It means that only the first half of the chart will be included on the first page. Printing spreadsheets is challenging, especially if you are only limited to common paper sizes.



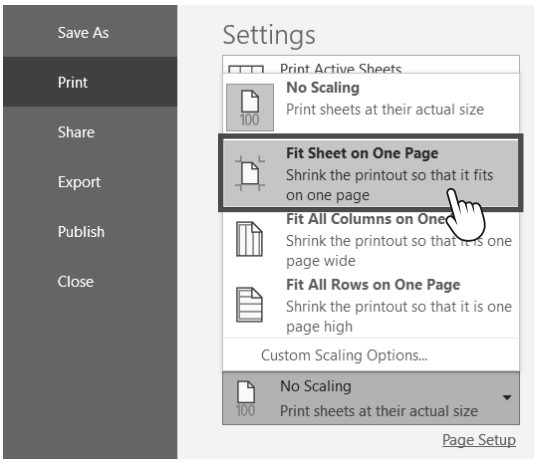
	A	B	C	D
1	Students	First Quarter Grade	Second Quarter Grade	Remarks
2				
3	Learner1	85	83	Passed
4	Learner2	87	90	Passed
5	Learner3	83	85	Passed
6	Learner4	77	81	Passed
7	Learner5	75	77	Passed
8	Learner6	73	76	Failed
9	Learner7	88	82	Passed
10	Learner8	84	86	Passed
11	Learner9	85	91	Passed
12	Learner10	91	92	Passed
13	Learner11	87	87	Passed
14	Learner12	81	88	Passed
15	Learner13	85	89	Passed
16	Learner14	79	84	Passed
17	Learner15	72	78	Failed
18				
19	Quarter	Passed	Failed	
20	1st Quarter	11	4	
21	2nd Quarte	10	5	



To fix this problem, you can put the chart after the data above or simply change the orientation from Portrait to Landscape.

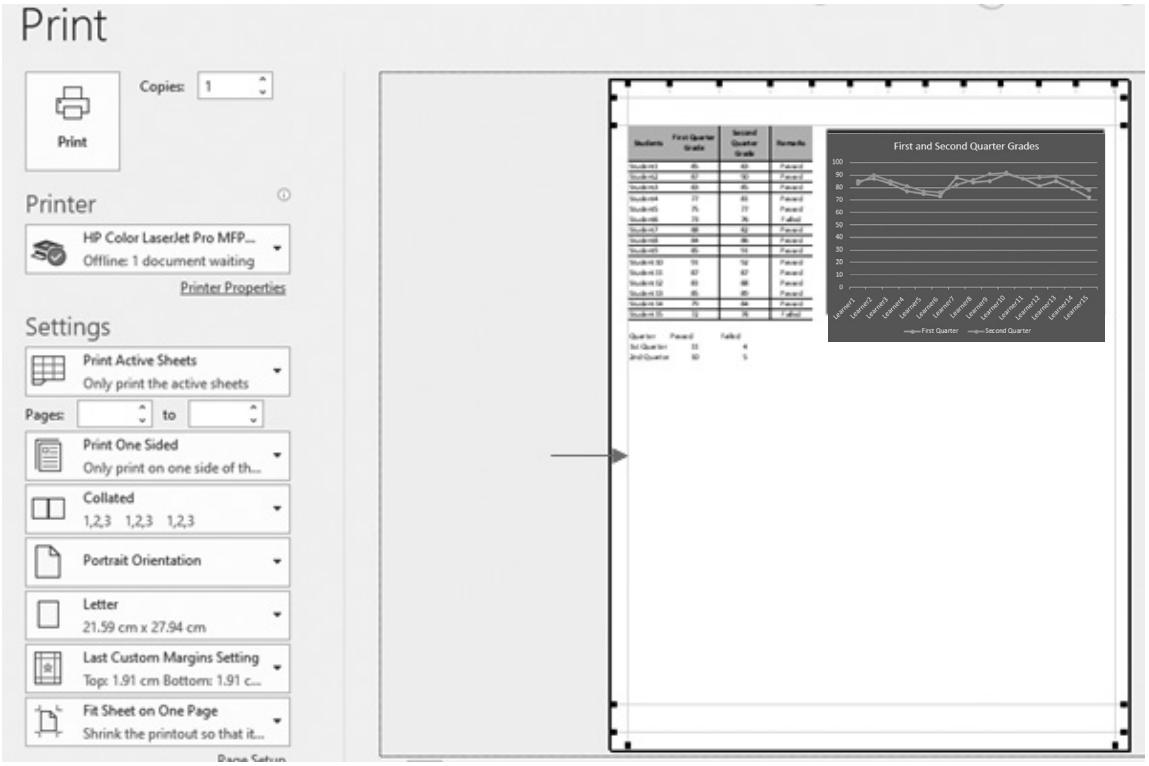


But if you are aiming for a portrait orientation, adjust the margins or scale of the spreadsheet. Click the Scaling option on **Print Preview** then choose **Fit Sheet on One Page.**



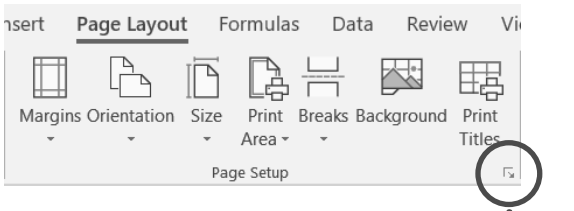
Scaling Options

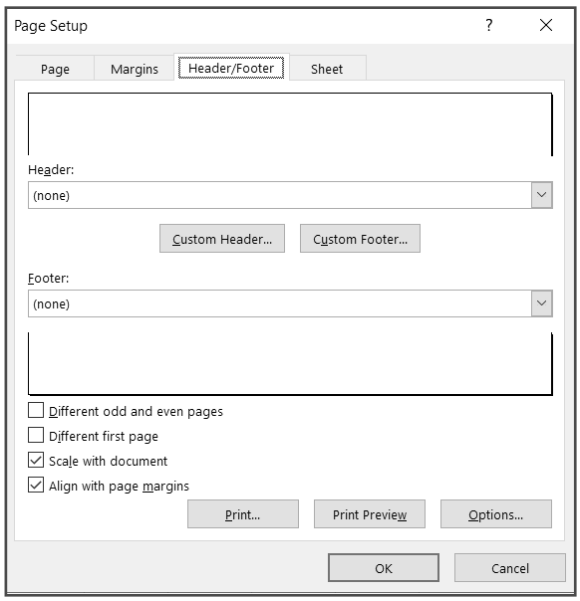
You may use **Show Margins** to enlarge the scale.



HEADER AND FOOTER

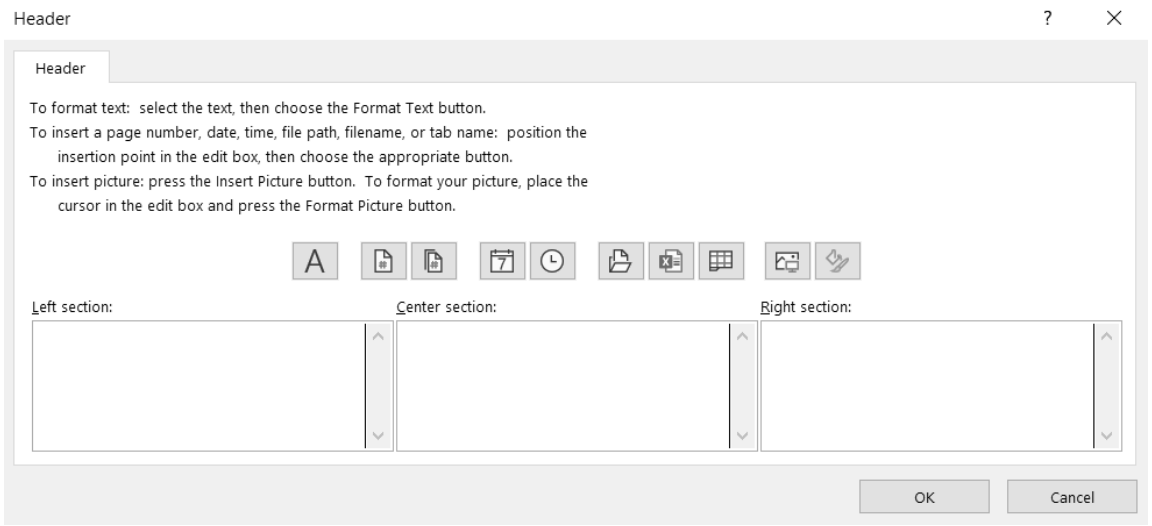
To add a header and footer, open the Page Setup dialog box.





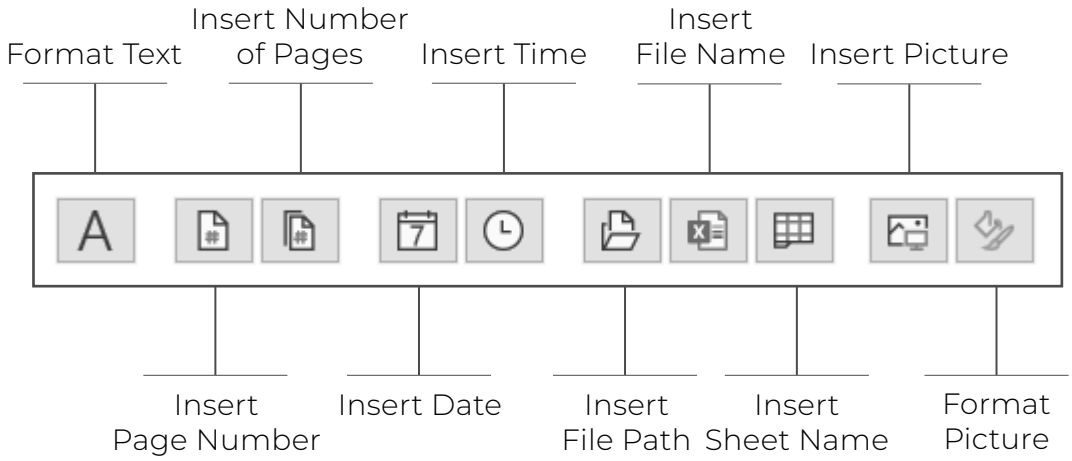
In the Header/Footer tab, you will see that Excel already has a number of presets based on your worksheet when you click on the Header or Footer drop-down. You may choose from the list or customize your own.

To customize your header or footer, click **Custom Header** or **Custom Footer.** A header or footer dialog box will open. Click the left, center, or right section and type your own header or footer.

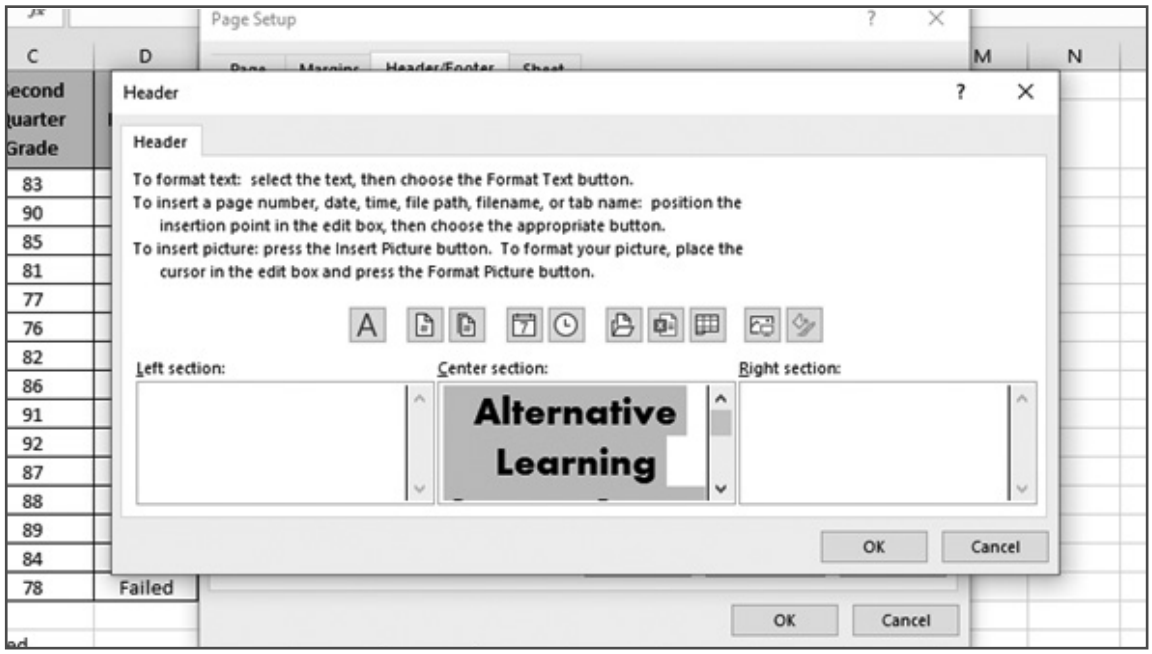


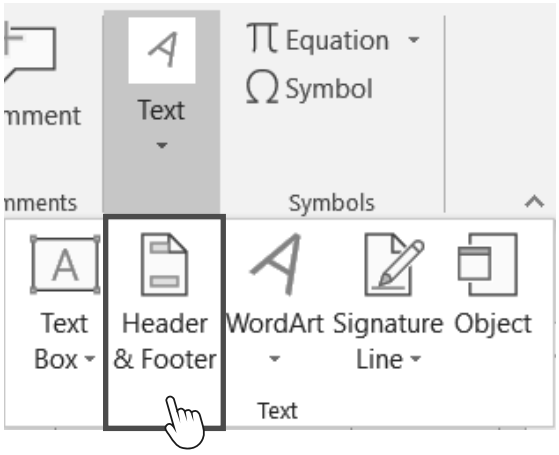
Custom Header Dialog Box

Customize your header or footer with the different available formatting options just above the text boxes.



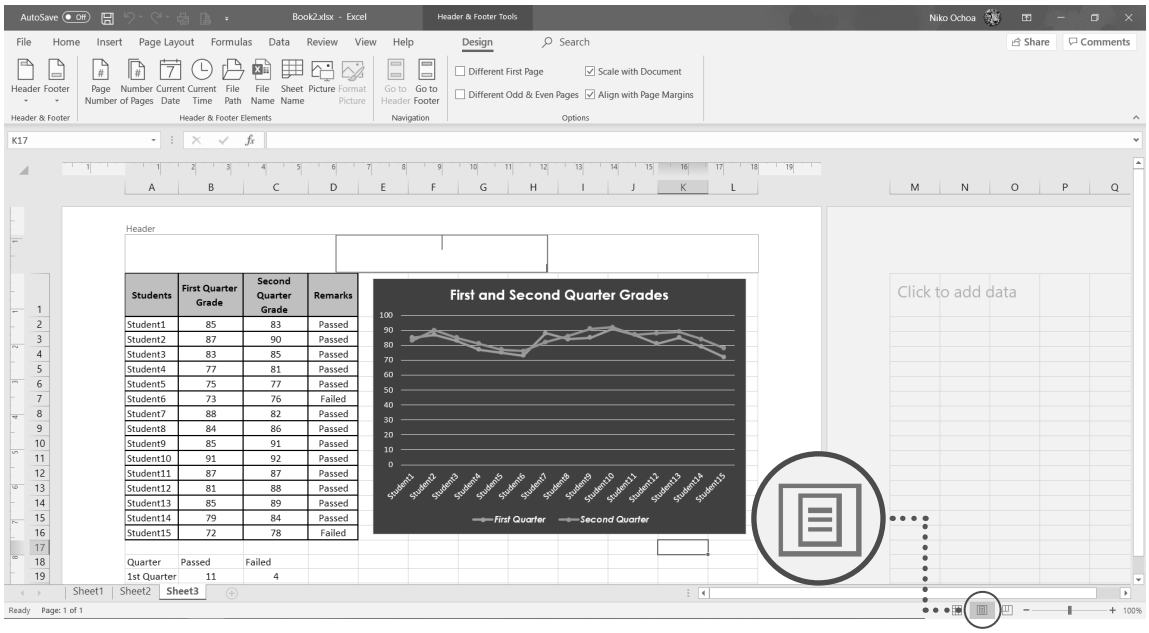
Let us write "Alternative Learning System" for our header and add some text formatting.



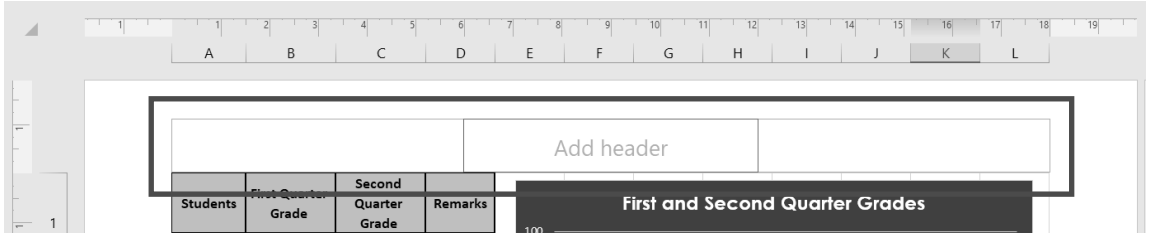


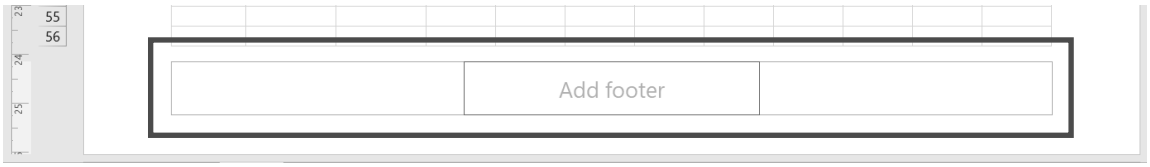
Alternatively, you can also find **Header & Footer** in the Insert tab of the Text group.

The display will change to the Page Layout view where you will see a Header panel on top and a Footer panel at the bottom. The Header & Footer Design tab will also appear on the Ribbon.

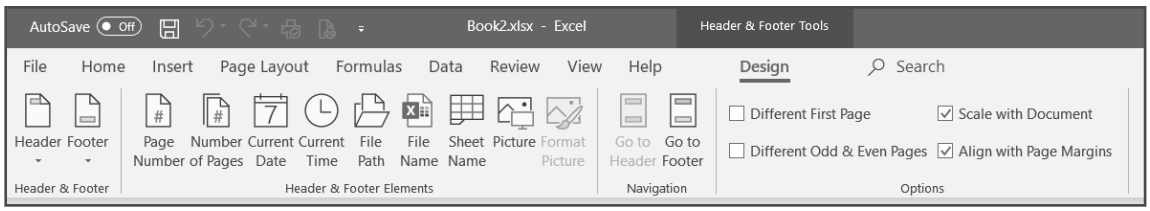


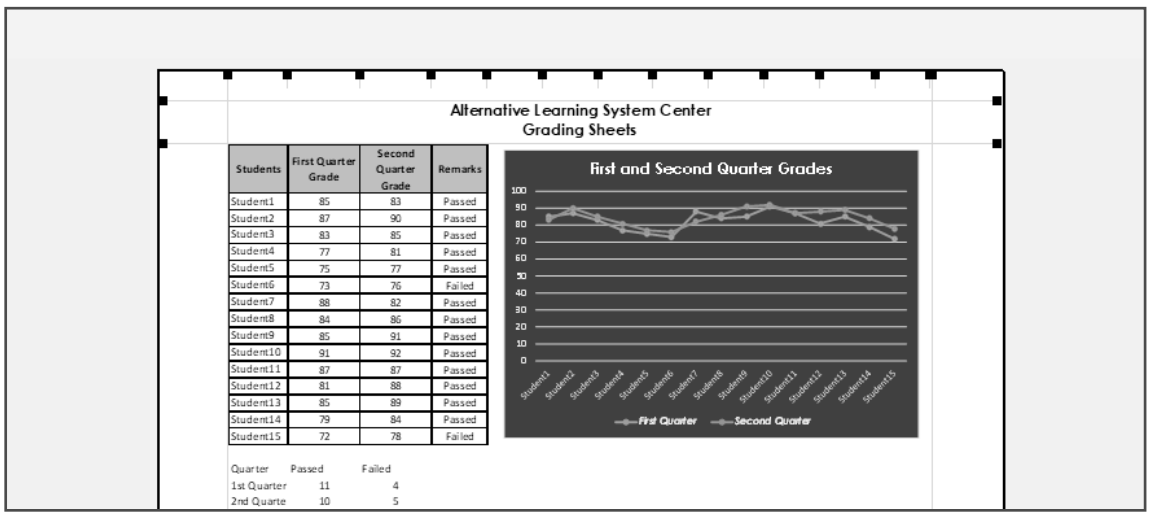
Click on the text box and type your new header or footer.





Edit your header and footer with the formatting tools available on the Header & Footer Design tab.





Students	First Quarter Grade	Second Quarter Grade	Remarks
Student1	85	83	Passed
Student2	87	90	Passed
Student3	83	85	Passed
Student4	77	81	Passed
Student5	75	77	Passed
Student6	73	76	Failed
Student7	88	82	Passed
Student8	84	86	Passed
Student9	85	91	Passed
Student10	91	92	Passed
Student11	87	87	Passed
Student12	81	88	Passed
Student13	85	89	Passed
Student14	79	84	Passed
Student15	72	78	Failed

Quarter	Passed	Failed
1st Quarter	11	4
2nd Quarte	10	5

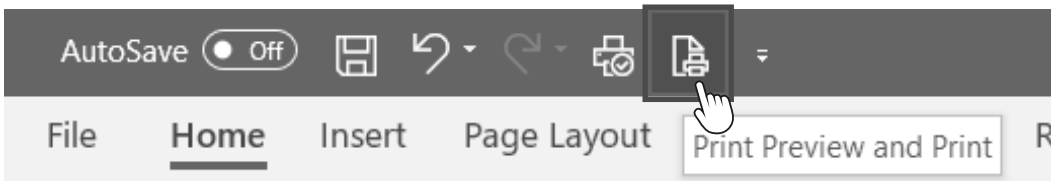
Header Preview through Print Preview

Besides the marquee lines that indicate the boundary of the page, you cannot see the worksheet's margins, size, orientation, header, and footer in Normal view. Go to Print Preview or the Page Layout view to view them.

PREVIEWING AND PRINTING SPREADSHEETS

It is important to preview your output first to avoid errors and waste of paper.

1. Select the Print Preview button on the Quick Access Toolbar or press **Ctrl+P** on the keyboard.



2. Choose the active printer on **Printer**, and then indicate the number of copies to be printed on **Copies.**

   To print specific pages, type in the pages you want to include. If there are five pages but you only want to print pages 1 to 3, then type *1* on the first box and *3* on the second box. If you only want page 2, then type *2* on the first box. If you are going to print the entire workbook, leave it blank.

Charts are used to visually present and interpret data. You will probably encounter charts on other office productivity tools and the same procedure in creating charts can be applied on those tools.

LESSON 3

SHARPENING YOUR SKILLS

Directions: Using a Venn diagram, compare and contrast the different types of charts used in a spreadsheet by listing down their characteristics and features. Do this activity on a separate sheet of paper.

1. **Column Chart** **Bar Chart**

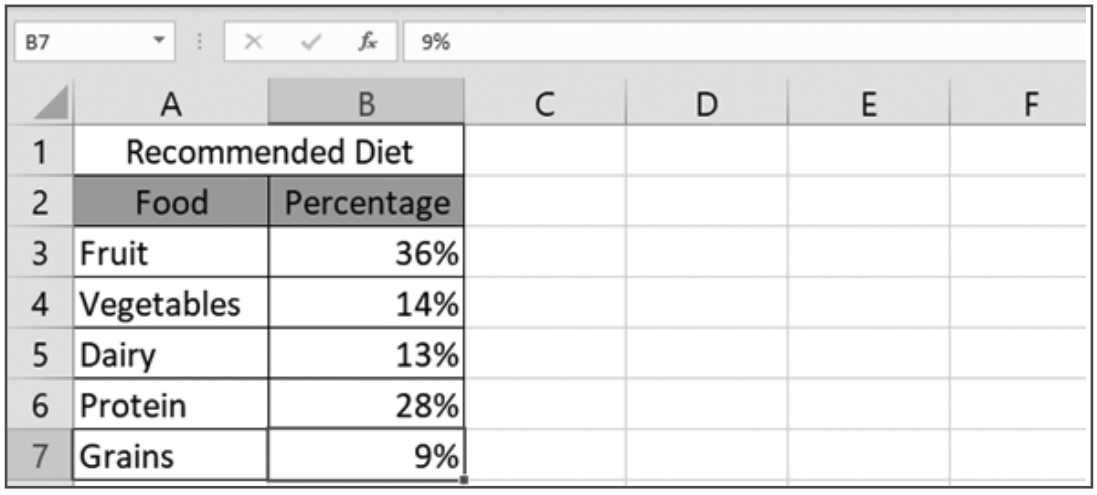
2. **Line Chart** **Pie Chart**

LESSON 3

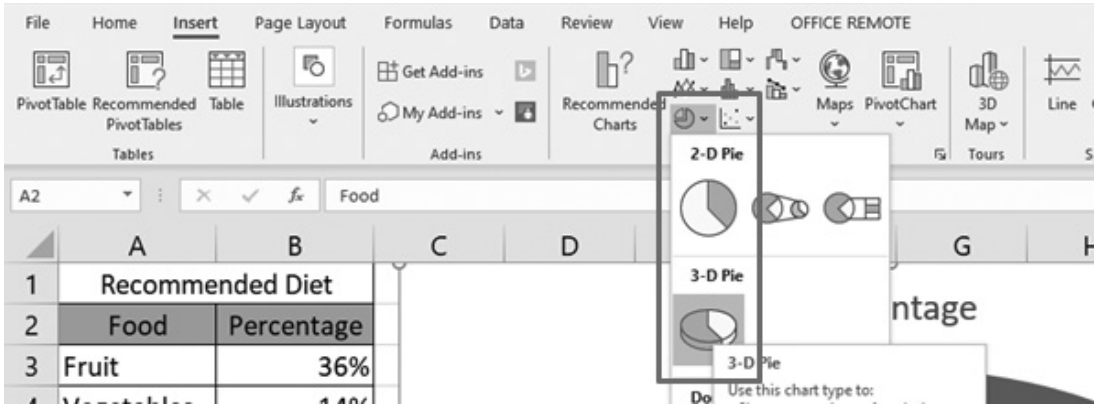
TREADING THE ROAD TO MASTERY

Directions: Follow the procedure to practice creating a pie chart. If you do not have a computer, please ask for assistance from your mobile teacher.

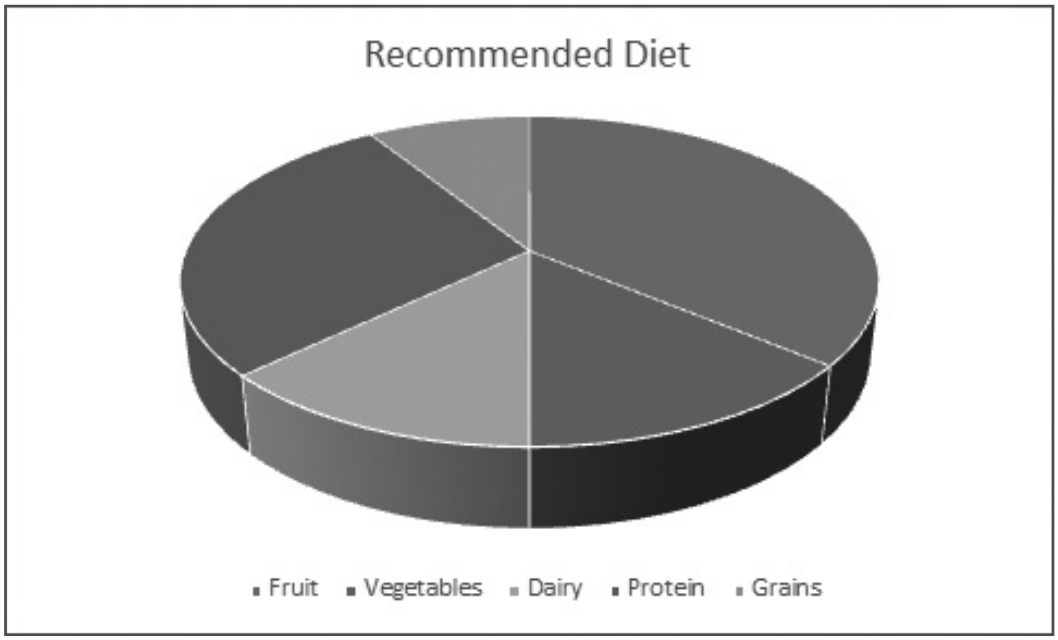
1. Open a new blank workbook in Microsoft Excel.
2. Use some data about the recommended diet. Enter the following data in the worksheet.



3. Select the data from A2:B7.
4. Click the Insert tab and go to the Charts group. Select **3-D Pie** on **Pie Chart.**



5. Change the chart title “Percentage” to “Recommended Diet.”



6. Change the chart style of the pie chart. Select **Style 3** on **Chart Style** on the Chart Design tab.

7. Save the worksheet with file name: PieChart_[lastname] (e.g., PieChart_Mendoza.xlsx).

Spreadsheet applications are effective and convenient tools that help make tasks easier and more accurate.

MODULE 3

DON'T FORGET

- **Spreadsheet**, or **worksheet**, is an arrangement of cells in columns and rows used to organize, analyze, calculate, and report information, usually in numerical form.
- The basic parts of a spreadsheet are **rows, columns, cell, active cell, cell address, formula bar,** and **sheet tabs.**
- **Workbook** is a file where spreadsheets are contained.
- A **cell** is made up of rows and columns.
- **AutoFill** allows automatic entering of data based on a pattern.
- The row height and column width can be adjusted through its headers.
- You can add two or more sheets in a workbook.
- **Formulas** in a spreadsheet are an expression that operates or calculates the values in a range of cells or a cell.
- **Functions** (**sum, average, count, max,** and **min**) are predefined formulas that are already available in Excel.

- **Cell reference** or **cell address** is a combination of a column letter and a row number that identifies a cell on a worksheet.
- There are two types of cell references, the **relative** and **absolute** references.
- The logical function **If** is useful in decision-making statements to determine if the result is a success to the standard being set.
- Microsoft Excel has a command called **Number Format** to change the format of numerical data.
- **Wrap Text** allows long texts to be displayed on multiple lines but in a single cell.
- **Charts** allow you to illustrate your workbook data graphically, which makes it easy to visualize comparisons and interpret results.
- The four basic types of charts are **column chart, bar chart, line chart,** and **pie chart.**
- The header and footer in a spreadsheet can be seen in **Print Preview.**

MODULE 3

EXPLORE MORE

To learn more about spreadsheets, visit the following websites:

- https://www.edu.gcfglobal.org
- https://www.excel-easy.com

MODULE 3
REACH THE TOP

Directions: Identify the word being described in each statement. Choose your answer from the word pool and write it on a separate sheet of paper.

$	Ctrl key	Shift key	Pie Chart	Count
Relative Reference	Formula Bar	Google Sheets	Spreadsheet	Columns
Formula	&	Average	Fill Handle	Sum
Cell Reference	.doc	XSLX	Absolute Reference	#
Line Chart	#REF!	Wrap Text	Workbook	=
Fill Color	#DIV/0!	Functions	#NAME?	Charts
Ribbons	Comma	Cell	If	Rows

1. This is where spreadsheets are contained.
2. It is the individual intersections between rows and columns.
3. It shows the contents of the active cell and allows you to create and view formulas.
4. It is a free online spreadsheet program.
5. This is the default file type of Microsoft Excel.
6. This is a tool to use in copying cell contents automatically.
7. These are vertical lines for data in a spreadsheet.
8. It is used to start a formula in the formula bar.
9. This error displays when a number is divided either by zero or by a cell that contains no value.
10. It is the arrangement of cells in columns and rows used to organize, analyze, calculate, and report information.
11. This is an expression that operates or calculates the values in a range of cells or a cell.

12. These are divided into logical groups called tabs, and each tab has its own set of unique functions to perform.
13. This is the key to press in the keyboard when selecting nonadjacent cell or cells.
14. This error displays when a cell reference is not valid or deleted.
15. These are horizontal lines for data in a spreadsheet.

ANSWER KEY

PRE-ASSESSMENT

PAGE 2

1. horizontal
2. vertical
3. cut
4. cell
5. font styles
6. font type
7. cells
8. fill color
9. horizontal
10. mathematical
11. pie chart
12. functions
13. comma
14. sum
15. fill color

LESSON 1: UNDERSTANDING SPREADSHEETS

TRYING THIS OUT

PAGE 5

1. 10
2. Spreadsheet
3. 40%
4. 4
5. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
6. =
7. 10:00 AM
8. 88.5
9. 02/09/2020
10. 1,000

SHARPENING YOUR SKILLS

PAGE 51

ACTIVITY I

1. Tabs
2. Ribbons
3. Quick Access Toolbar
4. Cell Address
5. Rows
6. Columns
7. Formula Bar
8. Cell
9. Sheet Number
10. Add Sheet

ACTIVITY II

Selecting Rows and Columns

1. To choose a row or column, click the row header (number) or column header (letter).
2. To click more than one row or column, hold your mouse from the headers then hold the left click and drag the mouse vertically or horizontally.

3. To select nonadjacent rows and columns, click the desired rows and columns header while pressing the Ctrl key on the keyboard.

Inserting and Deleting Rows and Columns

1. To insert row or rows in between, right click on the row header and click Insert.
2. To insert more than one row, select the desired number of row headers and click Insert. The selected rows correspond to the number of new rows.
3. To insert column or columns in between, right click the column header click Insert.
4. To insert more than one column, select desired number of column headers then click Insert. The selected columns correspond to the number of new columns.
5. To delete cell or cells, do the same procedure in inserting rows or columns, but instead of Insert, click the Delete command.

Adding Worksheet

1. To add another sheet, click the plus sign button beside Sheet1.
2. A new sheet will appear with Sheet2 as the name. You can continue doing this if you need more worksheets.

TREADING THE ROAD TO MASTERY

PAGE 53

1. Select the cell and type the desired data.
2. Double-click the cell width after the cell box where the text was entered.
3. Click the add button sheet then right-click the Choose Rename command then change to the desired sheet name.

ANSWER KEY

LESSON 2: USING FORMULAS AND FORMATTING CELLS

TRYING THIS OUT

PAGE 55

1. +
2. −
3. ×
4. ×
5. =
6. >
7. <
8. >
9. >

SHARPENING YOUR SKILLS

PAGE 98

1. =A2+B2
2. =B2−C2
3. =B3−C3
4. =B2*A6
5. =B3*A6

ANSWER KEY

LESSON 3: INSERTING CHARTS AND FINALIZING SPREADSHEETS

TRYING THIS OUT

PAGE 104

1. 5
2. Manufacturing
3. 8.3%
4. R & D
5. 100%

REACH THE TOP

PAGE 132

1. Workbook
2. Cell
3. Formula Bar
4. Google Sheets
5. XSLX
6. Fill Handle
7. Columns
8. =
9. #DIV/0!
10. Spreadsheet
11. Formula
12. Ribbons
13. Ctrl key
14. #REF!
15. Rows

GLOSSARY

Absolute	Viewed or existing independently and not related to others; not relative or comparative.
Accounting	The action or process of keeping financial accounts.
Analyze	To examine something to find out what it is or what makes it work.
Calculate	To determine the amount or number of something mathematically.
Currency	A system of money in general use in a particular country.
Data	Facts and statistics collected together for reference or analysis.
Decimal Place	The position of a digit to the right of a decimal point.
Information	The summarization of data.
Interface	A device or program enabling a user to communicate with a computer.

GLOSSARY

Interpret	To describe the meaning of something.
Organize	To arrange into a structured whole.
Proportion	The size, number, or amount of one thing or group of things as compared to that of another.
Relative	Considered in relation or in proportion to something else.
Templates	A preset format for a document or file, used so that the format does not have to be recreated each time it is used.

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Alexander, Michael. "10 Excel Chart Types and When to Use Them." Dummies. Accessed March 20, 2020. https://www. https://www.dummies.com/software/microsoft-office/excel/10-excel-chart-types-and-when-to-use-them/.

Lee, Gabriela, Alexander Maximo, Stevenson Lee, Ralsley Christopher Ramos, Kim Enriquez, Joy De Jesus, Lesley Abe, and Jaime Caro. *Desktop Productivity* Second Edition. Quezon City: TechFactors, Inc., 2013.

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